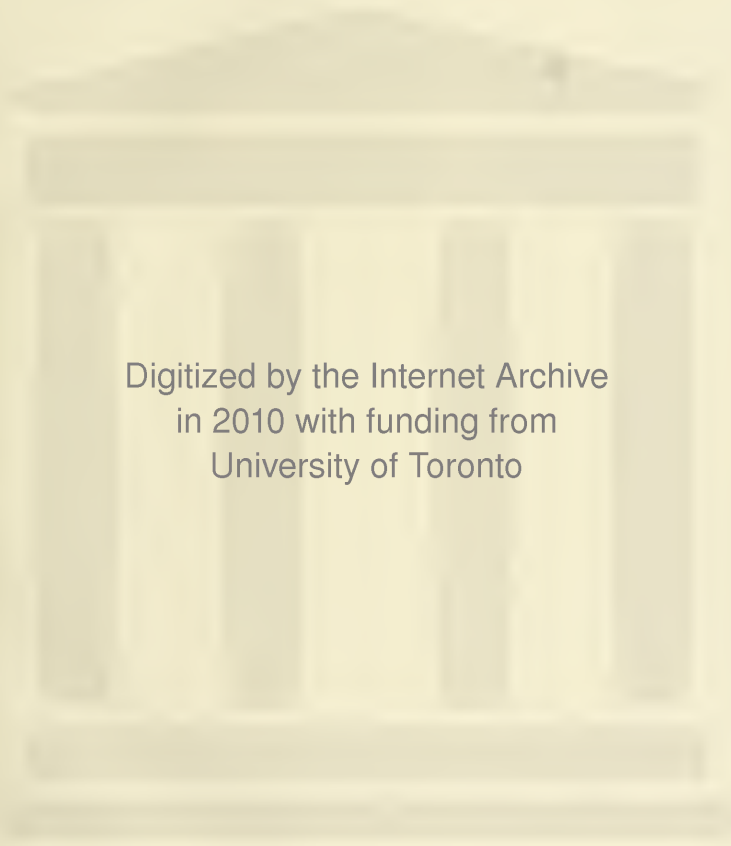




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Original Articles.

CHRONIC VASOCONSTRICTION SPOTS AND THEIR SIGNIFICANCE.

By EDWARD A. TRACY, M.D., BOSTON.

VASOCONSTRICTION spots, whitish spots in the skin, produced by vasoconstriction of the peripheral blood vessels in the skin, are phenomena that, so far as the writer is aware, have not been heretofore described or studied. As a rule, they are not impressive to the sight, and are apt to be overlooked unless the observer has an appreciation of what to look for. The best way to get an accurate idea of a vasoconstriction spot is to observe one carefully, and thus to become familiarized with the object to be looked for in a clinical examination. Fortunately for this purpose, in the normal individual a vasoconstriction spot can be produced readily by reflex action, and as the spot so produced does not differ in appearance from the vasoconstriction spots which are the subject matter of this essay, a practical method is offered to gain an accurate idea of the phenomena under consideration. The skin of the forearm is a convenient region for the production of such a reflex vasoconstriction spot. To produce one, rub lightly a small surface of the skin (about a quarter of an inch in extent)

with the head of a match. After ten or more seconds, the rubbed skin will whiten (in Caucasians) and remain so for a couple of minutes, after which the spot slowly fades. Sometimes the spot is faintly visible after eight or more minutes. This reflex vasoconstriction spot may properly be termed a factitious vasoconstriction spot.

Vasoconstriction spots (except factitious ones) are abnormal. This has been determined from the examination of thousands of individuals. In but a minority of them were observed vasoconstriction spots in their faces, arms, or hands, to which skin regions the examination for the spots has been limited. Some of these individuals upon whom vasoconstriction spots were seen, apparently were free from symptoms of nervous disease. Others had symptoms referable to the brain,—dizziness, somnambulism, and others had signs of dyspituitarism. In some of these cases it was found that, while vasoconstriction spots were found at inspections with considerable intervals of time between, the location of the spots had shifted. But the individuals upon whom vasoconstriction spots were observed to be constantly in the same location—that is, those exhibiting chronic vasoconstriction spots—always presented disease of the nervous system. Chronic vasoconstriction spots are, therefore, regarded as pathognomonic.

and it is the chronic variety of vasoconstriction spots that is the subject matter of this essay.

The first observation of chronic vasoconstriction spots was made August 9, 1916, in a case of idiopathic epilepsy. On the left forearm of the patient, a girl fourteen years old, about the middle of the dorsal surface, a triangular whitish spot was noted (it could be covered with a split pea) and several smaller and irregularly shaped spots were noted on the dorsal surface of the right forearm. At times these spots were seen to fade quite away, and at other times they were seen to become a deeper white while being observed. These observations made it evident that the spots were due to active vasoconstriction, and not, *e.g.*, to scar tissue. From daily observation of the spots, in this case for several months, it was found that they occupied the same position in the skin and were, in fact, chronic vasoconstriction spots. From experiments and observations heretofore published¹ it is deduced that there are two essential factors in the production of peripheral vasoconstriction: 1, Stimuli passing over the sympathetic fibres innervating the blood vessels involved in the vasoconstriction, and 2, a sufficiency of adrenin in the blood stream. Clinical testing² in this particular case showed a sufficiency of adrenin in the blood stream; the problem presented itself, therefore, as to the origin of the stimuli coming over the vasoconstrictor sympathetic fibres, involved in the production of the spots. While puzzling over this problem, a case came under observation that furnished a promising lead for the solution. The case was that of a man upon whom, in the course of a clinical examination, there was discovered a vasoconstriction spot that further observations proved to be a chronic one. This chronic vasoconstriction spot was situated on the ulnar side of the left hand. Twenty years previously he had sustained a fracture of the left elbow. There is considerable deformity at the site of the fracture (indicated in the accompanying photogravure, Fig. 1) and the ulnar nerve is the seat of a neuritis located where the nerve crosses the elbow. At that joint there is a fusiform thickening of the nerve and it is very sensitive to pressure. His history gives numbness of the little and ring fingers, and spasmodic contractions of the adductors of the thumb and little finger, causing inability to work at carpentering. On several occasions, pressure over the thickened portion of the nerve

caused pain and the following objective phenomena: Fibrillary contractures in the adductor of the little finger; sweating in an area of about a half square inch on the ulnar side of the dorsum of the hand (the sweating was evidenced by glistening points and moisture—the latter felt by passing a finger over the area); and some enlargement of the vasoconstriction spot. These observations appear to demonstrate clinically, that the vegetative fibres, autonomic and sympathetic, course along with the sensory nerves. The more important bearing of the observations, however, is the relation which they show exists between the neuritis and the vasoconstriction spot upon the patient's hand. The neuritis with its hyperplasia of connective tissue is evidently the cause of the abnormal flow of stimuli over the sympathetic fibres involved in the vasoconstriction spot. It may be that the sympathetic fibres involved are pinched or irritated by the hyperplastic connective tissue and are thus excited into a chronic hypertonic condition, transmitting more impulses to their nerve endings in the musculature of the peripheral blood vessels than other sympathetic fibres that are not so impinged upon. A direct connection between the fusiform neuritic enlargement of the ulnar nerve and the vasoconstriction spot is shown by pressure upon the nerve lesion causing an enlargement of the vasoconstriction spot.

The study of this case of chronic vasoconstriction spot shows clearly its dependence upon a lesion situated in the course of its nerve fibres—the local neuritis of the ulnar nerve where it crosses the elbow joint. With the knowledge derived from the consideration of this case, an explanation of the vasoconstriction spots originally discovered upon the arms of the epileptic is quite apparent. There was no peripheral neuritis to account for the spots. In idiopathic epilepsy there are no generally accepted lesions in the spinal cord. It is true that Bullard,³ in 1906, reported a case of chronic idiopathic epilepsy in a non-hemiplegic, in which a degeneration of fibres in the cord was present. And John Turner⁴ wrote: "Considering the frequency with which degenerated cells occur in the cortex, it is not a matter of surprise that a secondary degeneration of the pyramidal tracts is often found; this may represent bygone or recent change. The number of cords examined for these degenerations was sixteen, and five

showed no degeneration. In seven there was more or less marked degeneration of the crossed pyramidal tracts. If one may draw a conclusion from such a small number of cases, degeneration or deficiency of the fibres in the posterior columns is still more frequent, having been met with in eight cases."

Since Turner states his work was done on material from "congenitally deficient individuals," perhaps some or all hemiplegics, it furnishes no positive evidence of a cord pathology connected with idiopathic epilepsy *per se*.

If the peripheral nerves and the spinal cord have no irritative lesions to account for the abnormal flow of stimuli over the sympathetic fibres involved in the chronic vasoconstriction spots, an irritative lesion must be sought for higher up. In chronic idiopathic epilepsy there is the constant pathological finding of proliferation and increase of neuroglial tissue "occurring most markedly in various islets or special areas in the cortex."⁵ The pathologic gliosis constantly present in idiopathic epilepsy is certainly an adequate cause for the pathologic downflow of abnormal stimuli over sympathetic fibres, if it be granted that the vasoconstriction fibres of the peripheral blood vessels originate in the cortex. That they do so is strongly indicated by the constant presence of vasoconstriction spots in chronic idiopathic epilepsy, a disease in which cortical gliosis is always found. The cortical gliosis, by impingement of the neuroglial tissue upon the vasoconstrictor neurones, could produce the irritation causing an excessive flow of stimuli over the involved sympathetic fibres, this excessive flow of stimuli being an essential factor, as has been shown, for the production of the spots. Other observations also indicate that the sympathetic neurones innervating the peripheral blood vessels originate in the cortex. Anemic dermatography—the lasting white streak that follows stroking the skin of a normal individual, has been shown to be a reflex vasoconstriction of the peripheral blood vessels.⁶ This reflex is composed of sensory (afferent) impulses, and efferent impulses, the latter coming over the vasoconstrictor fibres to their endings in the muscular tissue of the peripheral vessels. That the afferent (sensory) impulses reach the cortex and are reflected there is rendered probable from the fact that in hemiplegia (with brain lesion) the reflex vasoconstriction on the paralyzed side is found to be slower. As in

these cases of hemiplegia, the sensory (afferent) fibres escape involvement in the hemiplegic brain lesion, it seems fair to assume that the other nerve element in the reflex, the efferent fibres, vasoconstrictor fibres, are involved in the hemiplegic lesion; and as this lesion is in the brain, below the cortex, it is difficult to comprehend the action of this lesion upon the efferent fibres unless they originate in the cortex. Further, the effect of the emotion of fear in producing blanching, and the effect of terror in cats (Cannon's experiments) in increasing the production of adrenin in the suprarenal capsules, are more comprehensible by the assumption of a cortical origin for the sympathetic fibres innervating the vessels of the face and the suprarenals, than by the contra-assumption of "no vegetative fibres in the cortex nor in the centrifugal spinal tracts," the hiatus between the cortex and the known nerve paths to the peripheral vessels and to the suprarenals being bridged by an imaginary "bitonus"—the views of L. Müller.⁷ With the facts already given in favor of a cortical origin for sympathetic fibres, Müller's hypothetical concept appears to be unnecessary.

Early in the study of chronic vasoconstriction spots, it was found that they are always associated with pigment spots in their neighborhood. Thus in Case 2, that of a chronic vasoconstriction spot on the ulnar side of the dorsum of the left hand, nearby is located a pigment spot, as is shown in the photogravure of this case (Fig. 2). In Case 1, that of an epileptic upon whom chronic vasoconstriction spots were discovered, numerous pigment spots are located in skin regions neighboring to the vasoconstriction spots. The vasoconstriction spots and pigment spots in this case are pictured in the photogravure (Fig. 3).

In the study of vasoconstriction spots, the pigment spots (of various shades of light to dark brown, and in size from a speck to an eighth of an inch square) serve the important purpose of landmarks on the skin, as the pigment spots are permanent. Using the pigment spots for landmarks, the location of the vasoconstriction spot or spots can be determined in reference to them, and a diagram of the vasoconstriction and pigment spots can be made at the time of the first observation. With this diagram before us, at later observations, we can easily determine the chronicity or otherwise of the vasoconstriction spot under observa-



FIG. 1.—Left arm at fullest extension, showing deformity at elbow joint.



FIG. 2.—Left hand, showing chronic vasoconstriction spot and pigment spot at ulnar side of dorsum.



FIG. 3.—Right and left forearms, showing chronic vasoconstriction spots and pigment spots, also anemic dermography (reflex vasoconstriction)—the white streaks across both forearms. Case 1, chronic idiopathic epilepsy.

tion. Whether a suspected spot be a true vasoconstriction spot or not can often be determined by gently stroking the skin nearby with the narrow edge of a wooden tongue depressor, using a pressure of about two and a half ounces. After stroking, if the suspected spot intensifies, becomes whiter, it is evident that we have to do with a vasoconstriction spot.*

Having described somewhat the characteristics of chronic vasoconstriction spots, a brief history of some cases in which they have been found and studied will be given, followed by a consideration of their significance.

CASE 1. H. D. Female. 16 years old. Under observation since May 1, 1916, to the present time. This is the case in which chronic vasoconstriction spots were first observed. Her history gives severe convulsions for a period of two weeks in infancy. She had measles at six years. A year after her mother noticed that at times she would clasp her hands suddenly, at times would become "deadly white" and faint. At eight years, convulsions occurred; the attacks increased in severity and from her tenth year to her fifteenth year she averaged sixteen attacks of grand mal a month.

Diagnosis. Chronic idiopathic epilepsy.

CASE 2. J. S. Male. Aged 29 years. Under observation from August 18, 1916, to the present time. While making a physical examination of him, there was discovered a vasoconstriction spot together with a pigment spot on the ulnar side of the dorsum of his left hand. Further observations determined the chronicity of the spot. The important findings in this case have been reported above.

Diagnosis. Left ulnar neuritis.

CASE 3. R. W. Female. Aged 21 years. Under observation from Oct. 9, 1916, to Dec. 9, 1916. She had measles and mumps in childhood. Has had several attacks of tonsillitis. Had three attacks of convulsions at time of first menstruation, which occurred in her twelfth year. Two years ago had two attacks of convulsions. Complains of attacks of dizziness, of attacks of sudden pallor and weakness, at which time she must sit down to prevent falling. A few chronic vasoconstriction spots were observed on the palmar and dorsal surfaces of the right forearm, and on the dorsum of the

left forearm, with pigment spots on each surface also.

Diagnosis. Chronic idiopathic epilepsy.

CASE 4. T. B. Male. Aged 19 years. Under observation from Nov. 18, 1917, to Aug. 1, 1918. He had measles and whooping cough in childhood. Healthy otherwise till eighteenth year. For a period previous to his first convulsion in March, 1917, he noticed that at times, when walking, "things would go black" for a moment or so. In May, 1917, he had another attack of convulsions, and in June a series of five attacks. In July he was operated upon for adenoids. In August he had a series of four or five attacks, and in September and October attacks occurred once a week. Chronic vasoconstriction spots were observed on the dorsum of the left forearm, and on the dorsum of the right forearm, one on each surface, together with small pigment spots.

Diagnosis. Idiopathic epilepsy.

CASE 5. F. Z. Male. Aged 12 years. Under observation from Nov. 15, 1917, to the present time. Had measles at five years, diphtheria at six years. Chronic otitis media on right side. Had first attack of convulsions last May. Has had six attacks up to Nov. 15, 1917. Since first outbreak of convulsions, his mother states, he would come home to her at times frightened because of strange sensations. He has dizzy spells. Before his first convulsion his mother observed no difference in character between him and her other three normal children.

A couple of chronic vasoconstriction spots, together with two minute pigment spots, are located on the dorsum of the right forearm.

Diagnosis. Idiopathic epilepsy.

CASE 6. T. H. Aged 15 years. Under observation from Nov. 13, 1916, till the present time. Had measles at two, pneumonia and pleurisy at 11 years. At eight years, had a fall from a tilt, striking on her head, and became unconscious for three hours. When twelve years of age, had attacks of dizziness and sudden weakness for a while, after which they ceased till July, 1916, when she again suffered from attacks of dizziness, sudden weakness, and also from fainting spells—sometimes four times in a week. Had one attack when asleep at night, characterized by deep breathing. The fainting spells were attributed to heart disease. Patient is chronically constipated. Several examina-

* The writer has devised a little instrument for testing the vasomotor reflexes, which can be used as well for this purpose, its chief merit being the easy attainment of the close approximation of the pressure of two and a half ounces when used for stroking the skin.

tions showed the heart to be normal. Marked pallor is present. A patch of gray hair is noted on the right frontal region.

Chronic vasoconstriction spots are noted on the dorsal surfaces of the left and right forearms, together with pigment spots.

Diagnosis. Incipient idiopathic epilepsy.

CASE 7. A. J. Male. Aged 10 years. Under observation from Oct. 30, 1917, to the present time. Had bronchitis at six months, whooping cough at two years, and measles at seven years. His father, dead seven years, was an alcoholic. His maternal aunt was an epileptic. In June, 1917, patient commenced to have dizzy and fainting attacks—he would become “deadly white” and “tumble over.” Twice he had two attacks on the same day. He suffered so frequently from dizziness that his mother ceased sending him on errands for fear something might happen to him. The fainting spells were attributed to heart disease. Several examinations showed a normal heart. Chronic vasoconstriction spots and pigment spots were observed on the dorsal surface of the right and left forearms and on the palmar surface of the left forearm.

Diagnosis. Incipient idiopathic epilepsy.

CASE 8. M. G. Female. Aged 10 years. Under observation from Oct. 30, 1916, to Jan. 9, 1917. Is said to have had convulsions in infancy. While under observation she was a pupil in a special class for mentally deficient children. She suffers frequently from headache. At times it is very difficult to manage with her in school because of her tantrums. A Binet test made May 4, 1914, gave her a mental age of 3.4—her age being then seven years and eleven months. In December, 1916, a Binet test gave her a mental age of 5.4, she being ten and a half years old at that time.*

Several chronic vasoconstriction spots and a pigment spot were observed on the dorsum of the left forearm. Some were also observed on the dorsum of the right forearm, together with a patch of chronic vasodilation. The vasoconstriction spots were seen to be intensified on two different occasions, when the child was very troublesome.

Diagnosis. Organic brain disease.

CASE 9. B. K. Female. Aged 14 years. Observed for several months in 1916, in an ungraded class, the average age of the pupils in

it being ten years. Chronic vasoconstriction spots located on the dorsum of the right forearm; also a patch of chronic vasodilation measuring about a quarter of an inch across enclosing a vasoconstriction spot.

Diagnosis. Organic disease of the brain.

What is the significance of chronic vasoconstriction spots?

Vasoconstriction in the peripheral blood vessels is caused by stimuli coming over the vasoconstrictors (sympathetic nerve fibres), together with a sufficiency of adrenin in the blood stream. The need of a sufficiency of adrenin in the blood stream has been deduced from experimentation on the production of reflex vasoconstriction.* A chronic vasoconstriction spot implies a constant discharge of stimuli over the involved vasoconstrictors, a quantity of stimuli greater in amount than that discharged by neighboring normal sympathetic neurones. The evidently causative condition for the increased flow of stimuli producing the chronic vasoconstriction spot in Case 2, is the ulnar neuritis, involving sympathetic fibres. The constant irritation of hyperplastic connective tissue impinging upon neurones may be the active cause of this local hypertonus of nerve fibres. This view is strongly supported by the experiment in Case 2, of making moderate pressure upon the fusiform enlargement of diseased nerve tissue, sequential to which the vasoconstriction spot was seen to increase in size. This increase can be explained by the pressure employed producing an impingement of vasoconstriction fibres neighboring to those involved in the chronic vasoconstriction spot.

In chronic idiopathic epilepsy there is a constant pathology in the cortex,—that of gliosis. This fact appears to be sufficient to account for the chronic vasoconstriction spots found on careful observation in chronic idiopathic epilepsy. Bearing in mind the findings in Case 2 herein reported, we have in this gliosis a sufficient reason (irritation of sympathetic neurones by gliotic tissue) for the production of the spots. Again, a cortical gliosis is found in other brain diseases, and Cases 8 and 9 are probably examples of such gliotic brain lesions (in non-epileptics) as in these cases there were no peripheral nerve or cord affections to account for the chronic vasoconstriction spots found present. In Case 8, it was noted that intensification of the vasoconstriction spots was observed associated with periods of mental ex-

* These tests were made by her teacher, Miss Katherine Haskell, who kindly furnished me with the above data.

itement. This observation connects the chronic vasoconstriction spots with a cortical phenomenon,—mental excitement, a connection readily explainable if we admit a cortical origin for the peripheral vasoconstrictors. A suggestive negative phenomenon, that points to the cortical origin of the peripheral vasoconstrictors, is observed in many cases of chronic idiopathic epilepsy. This phenomenon is a chronic patchy reflex vasoconstriction. Instead of the normal white streak of vasoconstriction that follows stroking the skin, a patchy streak is constantly observed in certain regions of the face or arms. This constant patchy reaction can be explained by some of the nerve fibres involved in the reaction not functioning. J. Turner,⁹ in his investigation of the pathology of idiopathic epilepsy, writes: "Considering the frequency with which degenerated cells occur in the cortex, it is not a matter for surprise that a secondary degeneration of the pyramidal tracts is often found." He also notes that "degeneration or deficiency of fibres in the posterior columns is still more frequent." This degeneration of fibres in the cord is very suggestive; it can be comprehended if secondary to cortical changes, and if the fibres involved are efferent ones. The constant absence of reflex vasoconstriction in certain skin areas in chronic cases of idiopathic epilepsy may be the clinical manifestation of this degeneration of nerve fibres found in the disease.

A most interesting feature in the study of chronic vasoconstriction spots is the intensification of these spots observed at times. In Case 8, this intensification was noted on two different occasions coincident with a degree of hyperkinesia manifested in the patient.

A careful study of Case 1 (a case of chronic idiopathic epilepsy) demonstrated that the tonus, irritability of sympathetic neurones increased before the onset of convulsions. In this case (Case 1) there was a marked acidosis present (demonstrated by the amount of bicarbonate of soda required to render the urine neutral), and this acidosis increased before convulsions. Frequently a marked albuminuria occurred directly after an attack of convulsions. There was evidently a marked defect in the metabolism present. We now know that the glands of internal secretion control the metabolism of the living body. It may be added that this control appears to be exercised in conjunction with impulses coming over the vegetative nervous system—since it has been shown

that adrenin in the blood stream is inert for the production of vasoconstriction until nerve impulses pass over the sympathetic fibres. (See "A Contribution to Vegetative Neurology," *BOSTON MEDICAL AND SURGICAL JOURNAL*, Vol. clxxvi, p. 538). Proof of the marked increase in tonicity of sympathetic fibres before the onset of convulsions in Case 1 is furnished by photographs of the arms of the patient. A series of consecutive plate exposures was made at minute intervals. The second plate showed small vasoconstriction spots not pictured on the first plate; the fourth plate showed vasoconstriction spots not on the third plate. These spots had originated in the moments intervening between the exposures of the plates, and so were termed "new-born" vasoconstriction spots. They evidence an increase in tonicity of the vasoconstrictors involved in the production of the spots. From a study of this case, with its increase of acidosis before convulsions, it would appear probable that some irritating substance was then circulating in the blood, and that this substance irritated diseased sympathetic fibres, and caused the outbursts of stimuli productive of the "new-born" vasoconstriction spots. That sympathetic fibres are diseased in idiopathic epilepsy has been previously demonstrated. (See "Idiopathic Epilepsy a Sympathicopathy," *BOSTON MEDICAL AND SURGICAL JOURNAL* Vol. clxxviii, Nos. 23, 24, 25 and 26.)

In Case 8, there was not only an evident mental deficiency, but a mental disease that manifested itself by periods of mental and motor excitement, followed by periods of torpidity. In this case there were never observed the marked vasoconstriction reflexes that accompany epilepsy, nor was there any history of convulsions except possibly in infancy. The action of the chronic vasoconstriction spots in becoming intensified at the periods of hyperkinesis suggests for explanation a faulty metabolism causing irritation of brain cells, analogous to the more nearly demonstrated toxin irritation of sympathetic fibres in chronic idiopathic epilepsy. The question: What is the significance of chronic vasoconstriction spots? is answered in the following conclusions drawn from the study of them.

CONCLUSIONS.

Chronic vasoconstriction spots, observed in the forearms, hands and face, are found associated with nerve and brain lesions. One or more pigment spots are found nearby.

Chronic vasoconstriction spots imply an increased flow of nerve stimuli over the vasoconstrictors involved in the production of the spot—a true hypertonia of the vasoconstrictors involved. The cause of the hypertonia of the vasoconstrictors involved in the chronic spots is probably mechanical—an enmeshment of the fibres in glial or hypertrophic connective tissue, and a consequent constant irritation of the neurones by the pressure of this tissue. The cause of the intensification of the spots at times observed, especially in idiopathic epilepsy, is probably a toxin in the blood stream, the product of a faulty metabolism, that further irritates the abnormal sympathetic neurones.

Chronic vasoconstriction spots, in cases in which peripheral nerve and cord lesions are excluded, point to an organic brain lesion.

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ACTIVE TUBERCULOSIS.

By H. F. GAMMONS, M.D., CARLSBAD, TEXAS.

PHYSICIANS are often called upon to decide whether a certain case of tuberculosis is active or not. The question is very easily answered in a great many cases. However, with our present knowledge of tuberculosis it is impossible to say in every case that the disease is or is not active.

In order to determine whether a certain case is active we must define activity as it is applied to tuberculous lesions. A tuberculous lesion is active just as long as there is an imperfect or incomplete walling off of the tuberculous focus so that either the bacilli or their poisons can affect the living cells in the vicinity of the lesion by continuity or in distant parts of the body by being carried through the blood stream.

In case the walling off of the tuberculous focus by tubercle formation and fibrosis is almost complete, we should not expect to find the signs of activity that we should in the case of

very little fibrosis. In the chronic case we do not find the manifestations of activity that we do in the early case, everything else being equal.

The student of tuberculosis is impressed with the fact that activity in tuberculosis, like other considerations in this disease, is relative and that it is a question of degree of activity. Furthermore, it is probable that every case of tuberculosis is active to a certain extent, excepting those cases where the focus has become calcified and the bacilli killed.

In order to make an absolutely definite statement that a certain case is active it would often be necessary to have the pathological specimen of the infected area to help in deciding. However, we can in our summary of a case usually decide whether the lesions are active and what the patient should do to get well or to keep well.

Specialists, as well as general practitioners, have in the past made the mistake of telling their patients in an unqualified way that their disease was cured or arrested. I have made many similar mistakes only to find that the patient has gone out and, after a short period of ordinary life, has had a recurrence of his former symptoms.

In later years I have been more cautious and have frankly admitted that I did not know, in apparently well cases, whether their foci were healed perfectly and that they should still consider themselves sick though able, for all practical purposes, to live the ordinary life, with a few restrictions. Furthermore, I emphasize the probability that once a person has tuberculosis he can consider it will stay with him only to crop out with renewed vigor if given a good chance.

A patient must be handled very diplomatically when given this information, and it is better not to tell him too much at the first visit or at the first examination in a sanatorium, as he will often, in his toxic condition, misinterpret any information, and in his morbid state will imagine the worst possible outcome of his disease.

In former years I went by the stethoscopic findings to a great extent, in conjunction, of course, with other signs, in determining the activity of a case. I laid great stress on the presence of crepitant râles at the apex as denoting activity as, of course, they do. However, as I have followed up these cases month after

month and year after year and have found apparently the same crepitant râles in the same location, I have questioned the value of finding these râles as a proof of activity. That they mean active pneumonic inflammation is not questioned, but the extent of time that they will persist is questionable. As we compare the other symptoms in similar cases with the symptoms in cases where we have only modified breath sounds we are impressed with the importance of these other constitutional and toxic symptoms in deciding the activity of a case.

Physicians often tell patients, after a chest examination only, that the disease is active or arrested without considering the other symptoms such as the pulse and temperature. It is absolutely impossible to say definitely that the case is active by chest examination alone. One can tell that there was activity but not that it is still present. I have examined patients from day to day and found the physical signs much different from day to day, but we should not infer that the disease is advancing, as it is changes in meteorological conditions that are probably causing the increase in the adventitious signs.

It is only by consideration of all factors in the case that we can arrive at a definite or nearly definite conclusion in regard to the activity in tuberculous cases. One of the most important signs of activity is elevation of temperature, and of equal importance is the rapid pulse, especially in the beginning cases. Cough and expectoration, loss of weight, appetite and strength and the tired feeling, if persistent, are indications of active trouble.

The patient can often tell by his own sensations that he is not up to his normal before there are other signs of activity. Patients often feel tired and nervous, or they do not have the physical endurance that they usually had, and the lack of endurance, muscle and nerve tone must be considered in this question.

The question of temperature has received many answers, some authors contending that one temperature is normal and some contending that another is normal. It is surely possible for patients to be absorbing toxins and to have local inflammations in their tuberculous foci without exhibiting any fever. In the chronic cases who have developed an antituberculin and in the open cases who are expectorating their toxins it is very probable that we have activity without temperature exhibitions.

A patient can expectorate sputum containing bacilli and still not have activity. However, the patient must not exhibit any other signs, toxic or constitutional.

All tuberculous patients should be tried out on graduated exercise under the supervision of a specialist before final judgment is passed on their probability of being inactive. This applies only to those cases who have no other signs of activity. It is a very frequent occurrence to find cases who, during rest treatment, show no signs of activity but, with a little exercise, develop temperatures.

CONCLUSIONS.

In order to tell whether a certain case of tuberculosis is active or arrested we must take all the factors in the case into consideration and not depend on the physical signs alone. The patient must be told that once he has tuberculosis, he must always be careful and must live according to the directions of competent physicians.

The manifestations of activity are more severe in the early cases and in the chronic cases with poor resistance.

A CLINICAL CHART OF RENAL DISEASES.

By H. S. JELLIAN, M.D., BOSTON.

THE subjoined chart of renal diseases is submitted for publication in the JOURNAL, with the hope that it may assist medical students and young graduates in English-speaking countries in coming to a quick and correct recognition of some of the most salient facts in the diagnosis of the diseases of the kidneys. The writer has had absolutely no claim whatever to original authority in preparing the Chart. It has been compiled and arranged in a tabulated form by following the teachings of the great masters in this specific field of medical science, adding, if I may be permitted to say so, a little of my own experience in the analysis of urine both in the Laboratory of Tufts College Medical School and in my own private practice.

Why did I prepare this Chart? I have felt all along that the most complicated diseases, so far as the symptomatology is concerned, are

A CLINICAL CHART								
NAME	PATHOLOGY	ETIOLOGY	SYMPTOMS	AMOUNT OF URINE	Sp. Gr.	REACTION	COLOR	AMOUNT OF SOLIDS
Active hyperaemia	Arterial engorgement	Irritation by poisons	Those of kidney irritation	8 to 1000 c.c.	1.035 to 40	Acid	High, not smoky	Relative increased
Passive hyperaemia	Venous engorgement	Obstruction of circulation in other organs	Same as above plus dropsy	5 to 800 c.c.	1.025 to 30	Acid	High	Dim.
Acute pyelitis	Inflam. of renal pelvis and calices	Acute infectious disease	Renal colic or none	Diminished	High	Acid	High	A little normal
Chronic pyelitis	Same as above	Gravel, tuberculosis, etc.	Renal colic radiating along the ureters	Dim.	1.010 to 14	Faintly acid or alkaline	Pale	Dim.
Acute cystitis	Inflam. of the vesical mucous membrane	Pathogenic micro-organisms	Frequent micturition, pain and pyuria	Dim.	High	Acid quickly becoming alkaline	High or bloody	Normal except crystals
Chronic cystitis	Same as above	Same as above	Same as above	About normal	Lowered	Alkaline	Turbid	Dim.
Diabetes insipidus	Obscure	Obscure	Inordinate thirst with polyuria	7500 to 20,000 c. c.	1.002 to 7	Acid or neutral	Pale	Increased
Diabetes mellitus	Arterio-sclerosis, cardiac hypertrophy and hepatic degeneration	Nervous influences and hepatic insufficiency	Thirst, polyuria, emaciation and nervous disorders	5000 to 20,000 c. c.	1.030 to 1.040	Acid	Light greenish tint	Increased
Amyloid degeneration	Amyloid or lardaceous degeneration of the liver and spleen as well as of the kidneys	Chronic suppurative processes, syphilis, etc. Phthisis	Gastric and intestinal disorders	Above normal. Variations	Low, 1.010 to 14	Acid	Pale	About normal
NAME	PATHOLOGY	ETIOLOGY	SYMPTOMS	AMOUNT OF URINE	Sp. Gr.	REACTION	COLOR	AMOUNT OF SOLIDS
<i>Acute parenchymatous nephritis</i>								
First stage	Tubular and glomerular inflam.	Acute infectious fevers, cold, etc.	Dropsy, pallor, high temp., lumbago, etc.	3 to 500 c. c.	1.020 to 30	Acid	Smoky	Dim.
Second stage	Same as above	Same	Same	About normal	Normal	Acid	Dark. Less smoky	Dim.
Third stage	Same	Same	Same	2 to 3000 c. c.	1.015	Acid	Pale	Normal
<i>Chronic parenchymatous nephritis</i>								
Active state	Enlargement of the kidney	Uncertain, infectious. Follows the acute form	Dropsy, puffy eye-lids. Frequent urination.	8 to 1000 c.c.	1.020 to 25	Acid	High	Dim.
Inactive state	Same	Same	Patient better	13 to 1400 c.c.	1.013 to 15	Acid	Pale	Dim., more in the active
<i>Chronic interstitial nephritis</i>								
	Hypertrophy of the left ventricle, arterio-sclerosis and renitis. Contracted kidney	Hereditary, syphilis, alcohol, dietetic influences	Dyspnoea, palpitation of the heart, headache	25 to 4000 c.c.	1.008 to 10	Acid	Pale	Dim.

AMOUNT OF NORMAL S

The total amount is about 60 to 70 grammes in 1500 c. c. of urine. Urea=30 to 35 grms., or about 1.5 per cent. Earthy phosphate=1 to 1.5 grms. Alkaline phosphate=2 to 4 grms. (2.8 grms. of H_2PO_4).

DISEASES.

URIC ACID	CHLORIDES	ALBUMEN	AMOUNT OF SEDIMENT	BLOOD	MICROSCOPIC INSPECTION	DROPSY	PROGNOSIS.
Relatively increased	Diminished, if fever	Trace	Considerable	Present	Hyaline and granular, blood and epithelial casts. Renal cells.	None	Inflam. disappears in a day or two
Normal	Slightly diminished	$\frac{1}{4}$ to $\frac{1}{2}\%$ in pregnancy	Same	None	Hyaline and granular casts. Renal and epithelial cells	Present	Atrophied kidneys etc.
Dim. or normal	Dim.	Trace	Abundant	Present	Caudate, uric acid, calcium oxalate, blood and pus cells	None	Unfavorable
Dim.	Dim.	Large trace	Abundant	Rare	Lot of pus. There may or may not be blood	None	Unfavorable
Normal	Dim.	Trace	Considerable	Present	Squamous and round epithelial cells. Pus and blood	None	Good
Normal	Normal	Large trace	Considerable	Sometimes present	Bladder cells, pus, and crystals of triple phosphates	None	Good
Increased	Inc.	Usually absent. No sugar	None	None	Precipitation of earthy phosphates	Oedema of lower extremities in later stages	Good
Inc.	Inc.	Trace or none. Sugar 4 to 5%	None	None	Ca oxalate and renal epithelial cells	None	Bad under 30 years of age
		$\frac{1}{2}$ to $1\frac{1}{2}\%$. More globulin than serum albumen	Small	None	Hyaline and pale granular casts. Little fat.	None, except in complications	Bad

URIC ACID	CHLORIDES	ALBUMEN	AMOUNT OF SEDIMENT	BLOOD	MICROSCOPIC INSPECTION	DROPSY	PROGNOSIS
Dim.	Nearly absent	$\frac{1}{2}$ to $1\frac{1}{2}\%$	Abundant	Present	Hyaline, epithelial and blood casts. Blood and pus	Present. Comes on suddenly	Good. Duration, from a few weeks to two years. Graver in children
	Dim.	$\frac{1}{4}$ to $\frac{1}{2}\%$	Less than above	Present	Brown and light granular casts. Pus and fibrinous cells	Decreasing	Good
	Dim.	Trace	Considerable	None	Free fat, fatty cells and fatty casts, with those of other stages	Decreasing	Good
	Normal	$\frac{1}{2}$ to 5%	Less than above	None	Free fat, fatty cells and fatty casts. Compound granular cells	Very great	Very bad
	Dim.	$\frac{1}{2}$ to $\frac{1}{4}\%$	Same	None	All found in the active state but less	Decreasing	Better, but no recovery
	Dim.	Trace	Slight	None	Narrow hyaline and pale granular casts	Rare	Bad: of long duration

IN 24 HOURS.

total. Uric acid=0.4 to 0.8 grm. Chlorides=10 to 16 grms. (6 to 10 grms. of chlorine).

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the diseases of the renal system, comprising, as it does, not only the kidney with its cortical, medullary and glomerular structures, but also the ureters, the bladder and the urethra. The urine is the surest guide to a correct diagnosis of the diseases of the kidney. To be sure, we have a few important, very important, physical signs, such as hypertrophy of the ventricles, dropsy, anasarca, etc., to help us in the diagnosis of renal disease, but these symptoms cannot be determinant, because they appear also just as regularly in cardiac and hepatic diseases. Analysis of the urine will, therefore, spread before us a pathologic panorama, bewildering in its extent and vast in its phenomena. Crowded as the course of a student in our medical schools is, he has no time to go deep down into the subject for a general comprehension of the various salient facts concerning the diseases of the kidney. Hence, as it seemed to me, the necessity of having on the wall a Chart comprehensive enough to show the pathological conditions both in the kidney itself and in its excretion.

Just a word explanatory of the construction of the Chart. It has been divided into eighteen items, each of which on the same horizontal line gives a specific indication of the present condition in the composition of the urine. Perpendicularly, it is divided into acute and chronic diseases. At the bottom of the Chart is given a table of the amount of normal solids excreted in 24 hours, which will, I believe, serve for a useful purpose of comparison. I have not attempted to give even an outline of treatment for the various manifestations of diseased conditions indicated on the Chart, because that would be a dangerous ground to tread upon.

THE IMPORTANCE OF BLOOD PRESSURE OBSERVATIONS IN SURGICAL PROGNOSIS.*

By ALBERT H. MILLER, M.D., PROVIDENCE, R. I.

FOR making a pre-operative prognosis and for judging the condition of the patient during operation, the blood pressure is the most valuable single means at our disposal. It may uncover arterio-sclerosis, nephritis, myocarditis, aortic insufficiency, or mitral stenosis. It regis-

ters the patient's ability to withstand hemorrhage, the depression of the anesthetic, and surgical shock. During the operation, the blood pressure provides the most valuable key to the patient's condition and gives early warning of the presence of shock.

BLOOD PRESSURE CONDITIONS.

The primary factor in the maintenance of blood pressure is the contraction of the cardiac muscle, which forces, during each ventricular systole, a quantity of blood into the larger arteries. These vessels, whose strong middle coat consists of elastic tissue, are distended during systole and, contracting during diastole, send a constant stream of blood through the smaller arteries, the capillaries, and the veins.

With a cannula inserted in the proximal end of a divided artery, the pressure in the vessel may be directly measured. The mercurial sphygmomanometer also estimates the arterial pressure with sufficient accuracy. The aneroid instrument is calibrated from comparison with a mercurial sphygmomanometer and its dial marked in millimeters or centimeters of mercury.

NORMAL BLOOD PRESSURE.

In a healthy young adult, the systolic pressure is represented by a column of mercury 120 millimeters in height, indicating a pressure of two and a half pounds per square inch. The systolic pressure increases from 120 millimeters, at the rate of one millimeter for each two years of age over twenty.

During diastole, the arterial pressure declines to a point indicated by a column of mercury 80 millimeters in height. The diastolic pressure represents the force or head which sends the blood in a constant stream through the small arteries, capillaries, and veins.

The pulse pressure represents the increment of force added to the diastolic pressure by each cardiac systole. The normal pulse pressure is 50 per cent. of the diastolic pressure. This pressure ratio varies from over 100 per cent. to zero, approaching the lower limit with impending death. The normal pressure ratio varies from 40 to 60 per cent.

The blood pressure, especially the pulse pressure, varies during the respiratory cycle, being less during inspiration and greatest at the beginning of expiration.

* Read before the Providence Medical Association, Oct. 7, 1918.

The systolic pressure increases with muscular development, physical exercise, eating, straining at stool, excitement, and mental worry, and diminishes with fatigue, rest, and sleep. It is lower in the erect than in the horizontal posture. The diastolic pressure is more stable and shows less variation from these causes.

BLOOD PRESSURE AND SHOCK.

The signs of surgical shock are (F. C. Mann) : Loss of sensibility to pain indicated by diminution in the necessary dosage of the anesthetic, pallor of the mucous membranes; a small, weak pulse; irregular, rapid, shallow or gasping respiration; markedly lowered blood pressure.

Signs closely simulating shock appear with hemorrhage or an overdose of an anesthetic. Certain intra abdominal manipulations produce shock with great regularity. The introduction of gauze packing into the abdomen or the prolonged manipulation of the intestines may be followed by signs of shock. Traction on the uterus, the gall bladder, or the pylorus are followed by a sharp decline in blood pressure.

There is a general impression that shock is likely to occur in patients who are lightly anesthetized. We have been unable to find symptoms of shock resulting from light anesthesia and are certain that the possibility of shock being so produced is so slight as to be generally disregarded. When a large dose of the anesthetic is administered, shock results with such regularity that we have come to believe that an overdose of the anesthetic is by far the most potent influence in the production of surgical shock.

APPARATUS.

For blood pressure observations during surgical operations, the usual five by nine rubber cuff with inelastic arm band is employed. The cuff is connected with the aneroid gauge by a rubber tube three feet long. A cantery bulb for raising the pressure in the cuff and a needle valve for reducing the pressure are attached to the gauge by a short rubber tube. The accuracy of the scale of the gauge is frequently tested by comparison with a standard mercurial manometer.

A flat stethoscope bell is connected to ear pieces by a single rubber tube three feet long.

The bell is provided with an elastic garter for keeping it in place at the bend of the elbow.

TECHNIC.

Before the anesthesia is commenced, the arm band is wrapped neatly about the arm and the outer fold is secured in place with a safety pin. The stethoscope bell is applied over the brachial bifurcation at the bend of the elbow and held in place by the elastic band.

With the stethoscope ear pieces in place, the pressure in the cuff is pumped up until the pulse is recognized. The pressure is then increased until the pulse is no longer heard. Upon opening the needle valve so that the pressure slowly falls, the point at which the pulse is first heard is noted as the systolic pressure. As the pressure further declines, five phases are noted: At the first appearance of pulse sound; on the appearance of a murmur or thrill; when the murmur is replaced by a clear sound; when this note is replaced by a dull pulsation; on the disappearance of all sound.

The diastolic pressure is noted on the appearance of the fourth phase, or, if this is not clear, at the fifth. All observations are taken during expiration. When there is considerable respiratory variation in the systolic pressure, the pressure during inspiration is also noted. Between observations, the pressure in the cuff must be entirely released. The pulse pressure is obtained by subtracting the diastolic from the systolic pressure. The systolic, diastolic, and pulse pressure should be systematically entered on a chart. The blood pressure observations with the pulse, respiration, and other data are to be entered on the chart at five or ten minute intervals throughout the operation.

PROGNOSIS AND DIAGNOSIS.

In the present advanced state of surgical knowledge, the patient has a right to expect a fairly exact preoperative diagnosis and a very exact pre-operative prognosis. The prognosis is a matter of importance to the surgeon as well as to the patient. Skill in prognosis results from experience and can be gained in no other way. The surgeon who makes and records a prognosis before each operation and checks up his pre-operative opinion with the result will rapidly gain in skill in this important department.

CLASSIFICATION OF CASES.

The patient who has undergone a proper physical examination before operation will be listed in one of three classes:

The good risks: Patients free from organic disease, whose surgical condition is not likely to prove fatal.

The fair risks: Patients suffering from organic disease but whose surgical condition is not specially serious.

The poor risks: Patients whose surgical condition is so serious or so far advanced as likely to result in fatality.

All patients of the first class are expected to recover. If a fatality should occur among this class of patients, the case should be carefully gone over to determine whether the pre-operative prognosis was in error or if the work of the surgical team is blamable for the fatality.

As an example of cases of the second class; an operation for appendicitis might be urgently required in the case of a patient whom the examination showed to be affected with diabetes. If coma and death follow such an operation, the fatality will be considered to have resulted from conditions beyond human control. If no examination and no prognosis had been made, the necessity for a lame explanation of the result would have arisen.

In the third class are those patients so desperately ill that recovery without operation is unlikely.

CASES STUDIED IN THIS PAPER.

In a series of 1,000 consecutive operations in which this classification was employed, the results were as follows:

	CLASS 1	CLASS 2	CLASS 3	TOTAL
Cases	734	179	87	1000
Deaths	2	14	29	45
Percentage .....	.27	7.82	33.33	4.5

These deaths occurred from twenty-four hours to three weeks after the operation. No death took place during or immediately following the operation. Measured methods of anesthesia were used exclusively.

MOOTS' RULE.

C. W. Moots has formulated a rule for determining the resistance of patients by pre-

operative blood pressure tests. He states the rule as follows: "A case has a systolic pressure of 120 and a diastolic pressure of 80; the pulse pressure is 40 and the ratio of pulse pressure to diastolic is 40 to 80 or one-half, which means 50 per cent. of the diastolic pressure. This pressure ratio is really an important matter, as it represents the relationship existing between the kinetic energy expended by the cardiac contraction in moving the blood column and the potential energy stored in the arterial walls and column of blood which they contain. If the pressure ratio is high or low, there is reason to apprehend danger. If the pressure ratio lies between 25 per cent. and 75 per cent., the case is probably operable; if outside these limits, it is probably inoperable."

To determine the accuracy of this rule, the series of 1,000 cases referred to has been checked up with the rule in mind. Of the operable cases, according to Moots' rule, 3.23% died and 96.77% recovered. Of the inoperable cases, 23.07% died and 76.93% recovered. Some of the cases classed as inoperable underwent minor operations safely, and some of those classed as operable died after very serious operations and under circumstances which could not have been readily predicted. The result shows the great value of Moots' rule in surgical prognosis.

MCKESSON'S RULE.

E. I. McKesson has formulated a rule for measuring the severity of shock during operation. He holds that "a typical case of shock is characterized by a diastolic pressure of 80 millimeters or less, a pulse pressure of 20 or less, and a pulse rate of 120 or more," and states that "after a half hour of sustained low pressure and rapid pulse has been passed, almost every patient succumbs either shortly or within three days of surgical shock and heart exhaustion."

The series of 1,000 cases referred to has also been checked up to determine the value of this rule. In a considerable number of cases, shock has appeared as determined by McKesson's rule, has been reported to the surgeon, and the operation has been rapidly completed. All of these patients have recovered. Thirteen of the patients

were in the danger zone as determined by this rule for from 25 to 70 minutes. Of these, nine died, giving a mortality rate of 69.23%. These figures indicate the efficiency and great value of McKesson's rule for determining shock during operation.

CONCLUSION.

Every operative case deserves a preliminary examination, diagnosis, and prognosis. The blood pressure examination is distinctly valuable in making the preliminary prognosis and in the diagnosis of surgical shock. The rule of Moots for determining the resistance of the patient and the rule of McKesson for diagnosing surgical shock are trustworthy and valuable aids.

Book Reviews.

Mental Conflicts and Misconduct. By WILLIAM HEALY. Boston: Little, Brown and Co. 1917.

The careful study of cases and the clear presentation of his conclusions from his work makes all that Dr. Healy writes not only of interest, but of importance. This recent publication gives in more or less detail many cases from his material which are most interesting and instructive psychologically. Dr. Healy's careful study of his cases, while not analogous to the "psychoanalysis" of Freud, has in many of the cases shown a sexual element which has tempted Dr. Healy to an explanation somewhat similar to that of Freud for the psychoneuroses. He considers that the introduction of a child to sex practices, as well as to other forms of wrong doing, results in the rejection or repression of the sex practices, which, nevertheless, remain as a repressed complex, constituting an "inner urge" which finds expression in stealing, truancy or other misconduct.

Those persons who reject the somewhat weird and fantastic psychology evolved by Freud and his followers to explain all neuroses, mental diseases, wit, and one knows not what else, will be able to find a much simpler, and, to our minds, a more satisfactory explanation of these cases in some other assumption. It certainly seems much more natural and more in accordance with well grounded laws of psychology to argue that the relation between the sex practices and the other forms of wrong doing is not so hidden and obscure, but much more probable that all these factors represent various forms of badness to the child to which it turns occasionally, even though a "good" child, in rebellion

against restraint and authority, and leaving the sex practices, for which he is not yet sufficiently developed, turns to the other forms of badness which he understands better.

Anatomy for Nurses. By WILLIAM GAY CHRISTIAN, M.D. St. Louis: O. V. Mosby Co. 1917.

This book is a text-book of anatomy. The subject is treated in a detailed manner, yet with a clearness which makes it a book particularly valuable to the pupil nurse. It is well illustrated in diagrammatic style. The subjects treated include: osteology, arthology, myology, splanchnology, arteries and veins, the nervous system, the organs of the senses, and histology.

Practical Medicine Series. Vol. x. Nervous and Mental Diseases. Series of 1916. Edited by HUGH T. PATRICK, M.D., and PETER BASOE, M.D., with the collaboration of LEWIS J. POLLOCK, M.D. Chicago: Year Book Publishers. 1917.

We look forward each year to the new volume of this series of reviews of current literature on nervous and mental diseases, as we know of nothing more satisfactory in this field. The editors from long experience are able to judge not only the articles of the year which are most important, but also those which will be of the most interest generally. The abstracts of the papers on the examination of the cerebro-spinal fluid and those on poliomyelitis are perhaps good examples of those that are of more than transitory value. Among the papers bearing on topics connected with injuries and diseases produced by the war, the abstract of Mott's Lettsoman lectures on the Effects of High Explosives on the Central Nervous System, and of Holmes' Goulstonian lectures on War Injuries of the Spine, are especially noteworthy.

The Elements of Hygiene and Public Health. By CHARLES PORTER, M.D., B.Sc., M.R.C.P. London: Oxford University Press. 1917.

This volume is designed to aid the medical practitioner in his public health work of disease prevention and health preservation. It deals with the various departments of hygiene, particularly the personal, public, factory, and school aspects. The author presents a careful study of the subject matter of hygiene—diseases, the natural requirements of the human being—air, water and food—statistics and statistical methods, law and sanitary science. The medical practitioner is urged to consider, besides the treatment of disease, its causation, prevention, and the importance of observing hygienic principles in surroundings and external conditions; this book is a valuable guide in complying with this request.

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PEACE AND THE NEW YEAR.

The year 1918 bears promise to be the most auspicious in the history of mankind; for it is likely to mark the beginning of an epoch more hopeful in prospect for the welfare of humanity than any which yet has dawned. Though the war is not yet technically ended, we may fairly expect within the year just begun the official establishment of a lasting and secure peace.

During the past quinquennium the war has unrolled before our eyes the panorama of the most poignant and momentous drama which the human race has ever enacted. Like all great events, it is still too near to be judged in accurate perspective. From the biologic standpoint, it may be regarded as an incident in evolution; but from the moral and humane aspect it has been of portent far beyond its academic significance.

Physicians are justly proud and grateful for the part which it has been the privilege of their profession to take in the great conflict. The service and the progress of medicine in the war constitute a page that will ever be illustrious in its history. Yet the doctors, like all other classes of relative non-combatants, will always grant eagerly the highest meed of honor to the men who, at peril and loss of life and its most precious possessions, have with their blood purchased the safety of the world and sealed the sacrament of the new peace.

The pride of America, too, may well be humble in the hour of thanksgiving for final victory. It is true that when she entered the war the cause of the Allies was a lost cause, and that it was her fresh strength which turned the tide of defeat. But all great causes, since history began, have been lost causes. The cause of Sparta at Thermopylae was a lost cause; so was that of our own Revolution during the dark winter of Valley Forge; so was that of France when the Pucelle raised her sword against the victorious English armies. It is far more to those who bore the burden and the heat of bitter days of despair, than to those privileged to share in the glory of the eleventh hour, to whom is due the utmost meed of gratitude and praise.

The fondest hope and belief of the world today is that a just league of free nations shall secure the future peace and happiness of the peoples. That such a league may utilize the physical force, which hitherto had been wastefully employed in destructive war, for constructive labor, is perhaps the fairest hope which science may regard as its opportunity in the ages to come. Many problems will be settled upon the cessation of armed conflict. Many others, economic, social, political, will await the thoughtful settlement of the generations of time. That the recent crisis of mankind has been safely passed is assuring evidence that the future is secure and that the New Year and those which will follow it in a succession of ages shall

"Ring out the thousand wars of old,
Ring in the thousand years of peace."

THE CONTAGIOUS DISEASES AND THE CHILD CONSERVATION MOVEMENT.

THE November issue of *The Commonwealth* contains an article dealing with "The Contagious Diseases and the Child Conservation Movement," by Dr. Edwin H. Place. As nearly 90 per cent. of the deaths due to contagious diseases occur during the first ten years of life, efforts to reduce this portion of the child death rate is certainly worthy of consideration in a child conservation plan.

The ultimate success of any plan of diminishing these diseases depends on the education of both parent and child to a real understanding of the manner and methods of spread of contagion and the principles of personal cleanliness and asepsis. Success, therefore, is not to be easily secured, nor quickly, unless new facts and new measures of fighting these diseases are secured.

The public health measures available for fighting contagious diseases are mainly five: Immunization, isolation, quarantine, disinfection, and sanitation and hygiene. Immunization is the only measure which has been effective in the control of highly contagious diseases, such as small-pox and typhoid.

In many diseases, isolation still remains the basis of preventive work. This method is defective, however, in three respects: (1) It is not secured sufficiently early; (2) it is not complete and thorough; and (3) it is not sufficiently prolonged. The essential of isolation technique is the destruction of the virus at its point of exit.

Quarantine was at one time a measure of importance in the control of contagious disease, but the complexity of modern social contact and the spread and range of locomotion have practically removed it as a weapon. Without doubt it is the only method that is effective in the control of the more highly contagious diseases, such as measles and influenza. The greatness of the problem usually prevents the use of this method except in times of nervous stress or hysteria, and then it is always incomplete, consisting in closing the schools and churches and other places of public gatherings. Contact still goes on, however, and even if less free, the epidemic goes through its complete course in a little longer time.

Disinfection has had marked fluctuation in the public confidence as a preventive measure.

Terminal disinfection, *i.e.*, after the recovery of the patient, has a very low standing at present. Its fall from favor may be said to be due to three factors: (1) It was expensive, (2) it did not disinfect, and (3) it was not necessary.

The difficulties of disinfection in securing proper concentration, heat and moisture of the gas and its proper confinement are increased by the trouble in deciding how much of the premises should be treated. To thoroughly disinfect the average home would require knowledge of the laboratory expert. As the difficulties of practical disinfection have grown clearer, the non-essential of much of previous routine has become appreciated.

The influence of sanitation and hygiene on the incidence of contagious disease varies inversely with the contagiousness. For example, in measles, rubella and influenza no appreciable protection is given by the best of hygienic surroundings. In those diseases, in which more intimate contact is required for their dissemination, as diphtheria, scarlet fever, etc., hygiene may play a larger part.

No appreciable immunity may be claimed for those who live under such surroundings except so far as they may be protected from contact with the virus of disease. While hygiene has, then, no especial influence on immunity to infection, it may have some slight influence on the course and complications of the disease.

INFECTIOUS DISEASES OF CHILDREN.

IN a bulletin recently published by the Public Health Service, a study of 6,078 cases of infectious diseases among immigrant children is reported. The study related especially to cross infection and hospital management. The author states that opinion in regard to the proper management of contagious diseases treated in hospitals has undergone much change within the past decade. The old idea that infection occurs through the air and that a distinct quarantine must be drawn between wards and buildings containing patients with different contagious diseases has been gradually abandoned. This bulletin tries to show how, in the Ellis Island Hospital, the new methods have worked out in practice, and suggests changes which will result in additional improvements.

The main conclusion reached as a result of the study is the practicability of treating contagious and non-contagious diseases in the same hospital and with the same nursing force. While it is not advisable to use the same open wards for both classes of cases, it has been demonstrated, nevertheless, that if these wards are cut up into small cubicles and the proper nursing technique enforced there is practically no danger of cross infection.

FRAMINGHAM COMMUNITY HEALTH DEMONSTRATION.

THE fourth of a series of publications issued by the Community Health and Tuberculosis Demonstration of Framingham, Massachusetts, telling the story of a \$100,000 experiment, has recently been called to our attention. This is the report of the results of the second medical series of examination campaigns. These two medical series were carried on at different seasons of the year, one in April, and the other in November and December of 1917. As a practical means of discovering cases of tuberculosis, these campaigns have been found to be of great benefit. In the first examination campaign 71 cases of tuberculosis were discovered and placed under treatment. Community health stations were established and citizens were examined by health station physicians. Families were examined at their homes, without charge, and sick persons referred to their local physicians for treatment. As a patriotic measure the members of the community were urged to present themselves for examination, and publicity notices in the newspapers, churches, stores, schools, and factories were distributed. The entire community was covered according to districts and an analysis of the work actually done proves the efficacy of this procedure from the point of view of the discovery of tuberculosis as well as other complicating diseases of a serious or lesser character. As an interesting example to other American communities this work, under the National Tuberculosis Association, is expected to bring under observation a larger number of tuberculosis cases and to prove its leadership in helping to conserve the health of the nation.

MASSACHUSETTS MEDICAL SOCIETY: ANNOUNCEMENT.

THE attention of the members of the Massachusetts Medical Society is called to the slip which was enclosed in last week's copy of the JOURNAL. It is hoped that the Fellows of the Society will take advantage of this reminder and pay their dues promptly, without waiting to receive a personal bill. This will greatly aid the work of the district treasurers.

A. K. STONE, *Treasurer.*

MEDICAL NOTES.

BOOKS NEEDED FOR MEN IN HOSPITALS.--

"There are tens of thousands of wounded men in our army hospitals and every returning transport and hospital ship brings more thousands. Many of these men will be in hospitals for months, some of them for a year or more, before they are sufficiently recovered to be discharged from the army.

"These men need books. They need books more than they need almost anything else, except surgical care and nursing."

Herbert Putnam, librarian of Congress, who is general director of the Library War Service of the American Library Association, thus directs attention to an opportunity for service that is open to everyone. For the books that are needed for our men in hospitals and those in camps awaiting demobilization are the books that are on the book shelves of almost every American home.

"What these men need in reading matter is good current fiction," said Dr. Putnam. "The American Library Association has supplied and is supplying technical and educational books by thousands to meet the insistent demands of our men in uniform for that class of reading matter. These books have to be bought, and almost all of the funds available for the Association's Library War Service are required for this purpose and for the maintenance of the service.

"For fiction and general literature we have to depend largely on gifts from the public. Since last spring more than three million gift books have been placed in the hands of our soldiers and sailors. Books wear out, and these books have been widely scattered among the camps on this side and overseas, so now we have no reserve supply of good fiction to draw on

for the pressing need of the moment, which is in the hospitals and the demobilization camps.

"Every good recent book that can be spared from anyone's personal book shelf will find its way quickly into the hands of some soldier or sailor who needs mental relaxation and recreation, if it is taken or sent at once to the nearest public library. Every public library in the United States is a receiving station for Library War Service and books received are forwarded as speedily as possible to the hospitals and demobilization camps.

"There is no better way to make a New Year's gift to the men who have been wounded in our service than to give books."

PUBLIC HEALTH MEETING IN CHICAGO.—At an annual meeting in Chicago on December 11, it was announced that the health authorities of the country, through the American Public Health Association, will strengthen defenses against influenza epidemics by coöperating with the Rockefeller Foundation and other public and private sources.

Papers were read on the treatment and handling of venereal diseases in the Army and on the Government's social hygiene campaign around army camps. Dr. Royal S. Copeland, New York City's health commissioner, expressed the belief that efforts are being made by the pulpit, press, and home to obstruct educational campaigns, which he considers necessary to combat the spread of such diseases.

REPORT OF SURGEON-GENERAL OF THE ARMY.

—The annual report of the Surgeon-General, U. S. Army, for 1918 (including statistics for the calendar year 1917 and activities for the fiscal year ending June 30, 1918), has just been issued from the Government printing office. It contains a comparative study of the health of the Army, 1820-1917; an account of the health of the mobilization camps and of the Army by countries; a consideration (70 pages in extent) of the principal epidemics in the camps; and a discussion of fractures and operations. Nearly 200 pages are devoted to the special activities of the medical department:—with the American Expeditionary Forces, and in the divisions of sanitation, hospitals, supplies, laboratories and infectious diseases, internal medicine, general surgery, orthopedies, head surgery, neurology and psychiatry, psychology, food and dental and

veterinary corps. In addition to the usual tables of illness, discharge for disability and death, there are given tables of battle wounds and operations; of complications of various diseases and of case mortality. The text is illustrated by 73 charts. Altogether the report is a study of health and morbidity in an Army of over 1,500,000 men, for the most part yet in the period of training. It should be of interest to epidemiologists, vital statisticians and army medical men.

CONSOLIDATION OF MEDICAL JOURNALS.—A few weeks ago we received an announcement from the *Medical Review of Reviews* advising us that they had just purchased the *Buffalo Medical Journal*, which was to be consolidated with their own publication in January.

We are just in receipt of another announcement from the *Medical Review of Reviews*, advising that they have also purchased *The Southern Practitioner*, which will also be consolidated with the *Review* next month.

INFLUENZA IN DUTCH EAST INDIES.—It has been unofficially reported that there are a million cases of influenza in the Dutch East Indies.

INFLUENZA EPIDEMIC IN GUATEMALA.—On December 12, an outbreak of influenza, with extremely high fatality rate, was reported from Guatemala. The epidemic is especially prevalent in the northern and western mountainous regions of the country.

SURGEON-GENERAL BLUE ISSUES WARNING.

Surgeon-General Blue has issued a warning to the country that the influenza epidemic is by no means ended, and that all possible precautions against the disease should be taken. Reports received by the Public Health Service show a reemergence of the disease practically from one end of the country to the other. Dr. Blue advised the closing of the public schools on the first sign of the reappearance of the epidemic. He emphasized the importance of every individual taking precaution.

Information reaching the Public Health Service shows that in California increases in the number of cases are reported from San Francisco and many other cities. Indiana reports no improvement in the situation, except that the cases are milder, while in Iowa there has been a marked increase in the number of cases.

RELEASE OF PHYSICIANS IN ARMY IS ASKED.—In Toledo, Ohio, 168 new cases of influenza were reported on December 12. The City Health Department has addressed a communication to the Secretary of War, asking him for the immediate release of physicians now in the Army, in order that they may return and aid in the fight against the outbreak of the epidemic. Twenty local physicians are reported to be in the service at Camp Greenleaf, Oglethorpe, Georgia. The schools have been closed to children under 18 years of age.

MEDICAL CONTROL ON THE ISLAND OF CYPRUS.—In the public health report issued for November 29, is published the following report of the malarial control on the Island of Cyprus:

"The annual medical report of the island of Cyprus for 1917 summarizes the antimalaria campaign which has been conducted on that island since 1913 and the results obtained. The number of cases of malaria treated was reduced from 10,035 in 1912 to 2,709 in 1917 and the percentage of enlarged spleens in school children was reduced from 17.2 per cent. in 1913 to 6 in 1917. The antimalaria work, as summarized in this report, has consisted of cleaning and improving drains and streams; making new drains; filling in, screening, or covering wells; stocking wells with fish; filling in or draining pools; cutting and removing of grass. Drugs were used to some extent.

"Shortly after the occupation of the island by the British in 1878, all troops except a small garrison were withdrawn because of the prevalence of malaria. During the present war, however, the island has been used for troops and a camp for prisoners of war has been established. The medical officer in charge reports no primary cases among prisoners and a rate among the troops of only 0.4 per cent."

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending December 14, 1918, the number of deaths reported was 295 against 229 last year, with a rate of 19.61 against 15.46 last year. There were 34 deaths under one year of age against 33 last year.

The number of cases of principal reportable diseases were: Diphtheria, 28; scarlet fever, 18; measles, 4; whooping cough, 13; typhoid fever, 2; tuberculosis, 45.

Included in the above, were the following cases of non-residents: Diphtheria, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 6; tuberculosis, 21.

MENTAL HYGIENE SOCIETY MEETING.—At the annual meeting of the Massachusetts Society for Mental Hygiene, held at the Twentieth Century Club, Boston, on December 10, the discussion centered about the bearing of mental hygiene on the education of the child, the adolescent, and the soldier. Professor William H. Burnham of Clark University, president of the society, announced that the two days' sessions of the annual conference of the society, to be held at Lorimer Hall, January 16, will be devoted to different aspects of this subject—the afternoon to lessons for mental hygiene from the war, and the evening to the immediate possibilities of the application of mental hygiene in the schools.

Professor Burnham in his address emphasized the opportunity for education following the great war, and the possibilities of training in morale in the public schools.

Dr. Charles W. Eliot, Dr. Herbert B. Howard, and others took part in the discussion.

\$2,500 BEQUEATHED TO BOSTON DISPENSARY.—By the will of the late Dr. Samuel Abbott Green, \$2,500 has been bequeathed to the Boston Dispensary.

PRECAUTIONS STILL NECESSARY AGAINST INFLUENZA.—Dr. John S. Hitchcock, director of the division of communicable diseases of the State Health Department, believes that the present flurry of influenza throughout the State while milder in character and attended with fewer fatalities from pneumonia, so far as can be diagnosed, is the same that swept the State in the proportions of an epidemic a short time ago. He is of the opinion that many of the cases reported as influenza are, after all, nothing more alarming than head colds. However, the people must again be cautioned against carelessness. The general rules laid down so often during the height of the epidemic should be observed.

Dr. M. Victor Safford of the Boston Health Department attributes the present recurrence of influenza to thoughtless crowding and want of care in visiting homes in which inmates have

been sick. In almost every case of influenza reported recently investigation traced its origin to the home of some person sick with, or who previously had the disease.

After the peace parade in Boston there was a sudden increase in the number of cases reported, which of itself should be an argument against unnecessary mingling in big crowds. Again, after Thanksgiving, there followed another sudden increase in new cases reported, evidently the result of indiscriminate home parties and gatherings. Precautions should be taken on Christmas.

State health officials believe that although the daily average of new influenza cases reported has jumped from 600 a week to between 800 and 900, it represents the end of the epidemic.

Figures reported to the Health Department on December 11 on the recurrent influenza-pneumonia contagion show a decrease in the total of new influenza cases, 76 having been reported for the twenty-four hours before nine o'clock on December 11, against eighty-four for the corresponding period on December 10. A remarkably low death rate continues and this is the hopeful element in the present situation. There were only four new deaths from influenza and two of lobar pneumonia reported on December 11.

In Waltham the outbreak of influenza is becoming more serious. Twenty-six cases were reported to the Board of Health on December 10. There are now more than 75 cases in the city.

In Brockton, the Belmont Hospital has been taken over by the Board of Health for the treatment of influenza patients. It has thirty-five beds and four nurses. On December 12, sixty-three new cases of influenza and two deaths resulting from pneumonia were reported in this city.

On December 12, in Boston and vicinity, the report to the Health Department showed an increase in the number of cases. There were 79 new influenza cases and eight deaths from this cause, and 15 new cases of lobar pneumonia, with nine deaths.

The report to the State Department of Health on December 11 includes 1,859 cases of influenza, more than three times the daily average of the preceding week. It is believed that this figure covers cases that developed in some cities and towns in a period of more than 24 hours,

and that the actual number of cases developed within that time was probably about 1,200. Twenty-four deaths were reported.

A report from Wellesley College showed that 149 students have been ill with influenza since October 4.

On December 13, 75 new cases of influenza were reported to the Health Department. Although this figure is still high, there has been a decided decrease in the number of deaths due to influenza and lobar pneumonia; only three deaths from influenza and four from lobar pneumonia were reported. There were 13 new cases of pneumonia.

Throughout Plymouth County residents are becoming alarmed at the rapid increase in influenza cases in the various cities and towns, and the authorities have put into force the precautions used during the epidemic two months ago.

In Whitman, there are now 500 cases. Fifty-four were reported on December 11. The schools have been closed, and a representative of the State Board of Health has conferred with local authorities in regard to the establishment of a pneumonia hospital.

The Board of Health of East Bridgewater has closed the schools and has put a ban on all public gatherings. More than 200 cases have been reported from Abington. In Rockland it is believed that the pneumonia hospital used in the recent epidemic will be reopened.

Owing to the increased number of influenza cases in Foxboro, the Board of Health has ordered all public schools and moving picture houses closed. Conditions are less serious than in the late epidemic.

SOMERVILLE MEDICAL SOCIETY.—At a meeting of the Somerville Medical Society, held December 12, the following resolution was unanimously passed:

"Resolved, that the Somerville Medical Society recommends that a change should be made in the Department of Health of the City of Somerville, that the present Board should be abolished and instead there should be appointed by the Mayor a Commissioner of Health, who is a graduate in medicine, who will serve full time and have full charge of all health departments of the city, and whose salary shall be determined by the Board of Aldermen."

A. N. MAKECHINIE, *Secretary*

STATE INVESTIGATION OF COMMUNICABLE DIS-

EASES.—Dr. John S. Hitchcock, head of the Bureau of Communicable Diseases of the State Department of Health, has reported the progress made in the campaign which has been undertaken by the department to check the spread of venereal diseases.

Clinics have been established in Attleboro, Boston, Brockton, Fall River, Lowell, Lynn, Pittsfield, Salem and Worcester. Work has been started to open clinics in Lawrence, New Bedford, Newburyport, Springfield, Fitchburg, Haverhill and Holyoke.

Boston clinics are at the Boston City Hospital, Boston Dispensary, Massachusetts General Hospital and the Massachusetts Homeopathic Hospital.

The reports of the cases sent the department are by numbers only. The only person who knows the name of the patient is the physician in charge. Dr. Hitchcock said it would be a number of years before statistics could be furnished showing definitely the manner in which the State campaign reduced cases of venereal disease, but he said good had been accomplished already in getting hold of thousands of people and placing them under regular treatment.

Since February 1, when venereal diseases were made reportable by the department, 9,807 cases have been reported, and all except 193 have been kept under treatment until discharged by physicians working with the State. One hundred and ninety-three ran away from treatment and could not be located.

Part of the campaign is educational, and 98 lectures have been given to 75,000 persons; the film "Fit to Fight," has been shown to 65,000 men.

Miscellany.

AMERICAN PUBLIC HEALTH ASSOCIATION. SECTION ON VITAL STATISTICS. COMMITTEE ON STATISTICAL STUDY OF THE INFLUENZA EPIDEMIC.

THE above committee was appointed November 20, 1918, by the chairman of the section on vital statistics to consider practical ways and means of collecting and analyzing the mortality and morbidity data of the epidemic of influenza, and to draw up recommendations on these matters.

The chairman of the committee on statistical study of the influenza epidemic, sent out a call to city and state registrars of vital statistics, and to statisticians skilled in the analysis and inter-

pretation of statistical data, for a meeting in Philadelphia, Pa., on November 29 and November 30, 1918.

A list of persons contributing to the committee discussions follows: Dr. Wilmer Krusen, Dr. Charles Scott Miller, Dr. Louis Lehrfeld of the Philadelphia Department of Health; Dr. John T. Black, commissioner of health of the State of Connecticut; Dr. Frank W. Wright, Dr. Walter H. Brown, health officers of New Haven and Bridgeport, Conn., respectively; Prof. C. E. A. Winslow, Department of Public Health, Yale School of Medicine; Dr. Frederiek S. Crum and Mr. Arne Fisher, Prudential Insurance Company of America; Dr. Seneca Egbert and Dr. W. H. Smyth, School of Medicine, University of Pennsylvania; Dr. J. P. Lichtenberger, Wharton School of Finance, University of Pennsylvania; Mr. Edwin W. Kopf and Mr. George H. Van Buren, Metropolitan Life Insurance Co.; Prof. Charles C. Grove, Columbia University; Prof. Horace C. Richards, Department of Mathematical Physics, University of Pennsylvania. Offers of cooperation in the work of the committee were received also from Mr. Robert B. Henderson, actuary, Equitable Life Assurance Society; Dr. Royal S. Copeland and Dr. W. H. Guilfooy of the New York City Department of Health; Dr. Charles V. Chapin, Providence Department of Health; Dr. Richard M. Pearce, Department of Research Medicine, University of Pennsylvania; Dr. W. H. Davis, Division of Vital Statistics, Bureau of the Census; and Prof. R. E. Chaddock, Columbia University.

The committee met in general session on Friday morning, November 29, and took up successively the following main points in the statistical study of the epidemic:

1. Estimates of the population exposed to risk, with due allowance made for the absence of persons in the military service and for the presence of munition and other war workers.
2. Uniform tables for the reporting of deaths according to day and week of occurrence, color or race, sex, age, etc.
3. Practical study of infant mortality incident to the epidemic.
4. Establishment of norms of mortality from (a) all causes of death, (b) influenza and (c) pneumonia during the months of September and October. Also the computation of norms of infant mortality considered as (a) "birth mortality" and (b) "true infant mortality."
5. Effects of various administrative and other control measures upon the course of the epidemic.
6. Fatality and other characteristics of the disease under hospital care. Standards of institutional statistics of the epidemic, effect of vaccines in the prevention and treatment of the disease.
7. Mortality among women in the gravid and parturient states.
8. Mathematical and other higher analytic study to determine the law of the epidemic, and

possibly the typical characteristics of the disease through such mathematical or higher analytic study.

9. Application of pathometrie theory to influenza data.

Following the general discussion on Friday morning, two subcommittees were designated to consider the following general aspects of the statistical situation.

I. Subcommittee on registration and tabulation practice: Dr. Charles Scott Miller, chairman; Dr. C. E. A. Winslow, recorder.

II. Subcommittee on pathometry of the epidemic: Dr. Charles C. Grove, chairman; Mr. Arne Fisher, recorder.

As a result of the deliberations of these subcommittees, the following resolutions were offered. These resolutions received the endorsement of the entire committee.

I. REGISTRATION AND TABULATION PRACTICE FOR STATES AND FOR CITIES 25,000 OR MORE IN 1918.

1. Resolved: That the Bureau of the Census be asked to prepare revised estimates of the 1918 mid-year population of the states and of cities having a population of 25,000 or over, if possible, with distinction by color or race. Due consideration to be made for special variations of population due to the absence of persons in military service, the presence of persons engaged in munitions and other war industries. Allowance to be made also for other factors such as extraordinary migration of populations due to other causes.

2. Resolved: That whenever death rates are based on local population estimates there shall be presented, also, a parallel column of data based upon such estimates of mid-year population as may be finally decided upon by the Bureau of the Census.

3. Resolved: That all population estimates be accompanied by a statement of method used in compiling such estimates for the particular locality.

4. Resolved: That deaths occurring in communities among men in military service should be deducted from deaths of the civilian population and separately tabulated in form parallel to that provided for influenza statistics of the civilian population.

5. Resolved: That all tabulations of the statistics of the influenza epidemic, there be presented mortality statistics showing the following facts: (a) Deaths from all causes, (b) deaths from influenza, (c) deaths from all forms of pneumonia, (d) deaths from all respiratory diseases combined, and that such data be compared with a *norm* for corresponding weeks or days, such *norm* to be based upon the average of five preceding years, if possible. If *norm* is computed in any other way, the method is to be detailed in the report.

6. Resolved: That, wherever possible, tabulations should be presented showing all deaths

in which influenza or pneumonia (all forms) is given as a *contributory cause*. Such special tabulation to show in relation to the influenza or pneumonia, the other causes of death involved. Comparative tables to be prepared from these data, similar to those in which influenza or pneumonia, all forms, is considered as a primary cause of death. When "influenza" or "pneumonia" (all forms) are reported jointly or in combination with other causes of death, the Bureau of Census *Index to Joint Causes of Death* shall be followed in deciding which course is "primary" and which "secondary" for purposes of these tabulations.

7. Resolved: That tabulations of deaths from all causes combined, be prepared for each week from September 1 to December 31, 1918; first by color or race; then by sex, each sex class to be further subdivided by age periods as follows: By single years of age up to five years and by five-year age periods thereafter up to age 65. ages 65 and over to be shown in one group. Weeks of death ending with midnight of each Saturday are stipulated herein.

8. Resolved: That similar tables to those outlined in resolution 7, be prepared for deaths ascribed as having been due to "influenza" or "pneumonia, all forms."

9. Resolved: That for all cities having a population of 25,000 or more in 1918, and for states, tables be prepared showing the *total number of deaths from all causes of deaths combined, by single days of death (actual day of death)* during the epidemic period, in addition to the requirements of No. 7 and No. 8; also that deaths from "influenza" and "pneumonia, all forms," be similarly tabulated. The epidemic period for the several cities and states shall include two weeks before the first day and two weeks after the last day upon which influenza shall have been adjudged to be epidemic by the State Commissioner of Health, or in the absence of such declaration, by the local health officer.

10. Resolved: That data for the deaths between September 1 and December 31, 1918, of infants under one year of age be provided as follows: (a) Deaths by week of age, under three months; (b) deaths by months of age, up to one year; each of these classes to be tabulated by *calendar weeks of death*, defined as in No. 7 above, and each of such groups on infant mortality to be further subdivided into the following groups of causes: (a) Total "influenza" and "pneumonia, all forms," (10, 91, 92); (b) total deaths showing "influenza" and "pneumonia, all forms," when classified as secondary or contributing causes of death; (c) total diseases of the respiratory system (86 to 98); (d) total diseases of gastrointestinal tract (99 to 118); (e) total all other causes of death (Numbers after causes of death are International List titles.)

11. Resolved: That for comparison of infant mortality during the epidemic, a *norm*, or series

of graduated indexes of infant mortality, by week, during the last four months of the year, and by sections of the country, shall be adopted similar to that used by the Prudential Insurance Company of America and prepared by them from the weekly reports of the Bureau of the Census. This *norm* to be prepared under the direction of the subcommittee on pathometry in a central office to be designated later.

12. Resolved: That data should be gathered by special investigation wherever possible, with regard to the incidence and fatality of epidemic influenza among pregnant women. It is suggested that the records of obstetrical dispensaries, visiting nursing associations and of maternity centers be examined to establish this fact, and that the statistical study of such records be based on not less than 10,000 records of unselected character. The complications and status of the product of pregnancy in each case of sickness and death of pregnant women during the epidemic to be specified.

13. Resolved: That *reported cases of influenza* be classified by sex and age for each calendar week of the epidemic, wherever possible.

14. Resolved: That it is most important to determine by special investigation the average and classified duration of disease from onset to recovery, or death, and also the average, maximum and minimum periods of incubation in the several states and cities.

15. Resolved: That a questionnaire be sent out to all states, and to cities of 25,000 and over in 1918, requesting the following information: (a) Date of the ordinance requiring reporting of influenza and pneumonia cases; (b) date of closing and reopening of schools; (c) date of closing and reopening of theatres; (d) date of closing and reopening of other places of public assemblage; (e) date of opening and closing of emergency hospitals other than emergency wards of regular hospitals. Number of such emergency hospitals and bed capacity of each, with statement of total cases handled and number of such cases terminated by death; (f) date of closing and reopening of saloons; (g) date of closing and reopening of churches; (h) regulation of soda fountains. Specify measures employed; (i) regulation of transportation systems—by stagger system, or otherwise. Please specify; (j) date of occurrence of first-known case; (k) on the use of vaccine in the community. Indicate possible sources (industrial establishments, camps, etc.) of data on use and results of vaccine treatment; (l) special educational campaigns; (m) regulation of funerals; the burial problem; (n) regulations governing the handling of foods. Copy of questionnaire to be sent you later.

16. Resolved: That data should be obtained in regard to the number of physicians and nurses in each community serving during the epidemic and the number of such physicians and of such nurses who died from influenza, pneu-

monia and other causes directly attributable to service during the epidemic.

17. Resolved: That each community should specify whether the use of masks was compulsory or not, and for what groups of individuals in the community.

18. Resolved: That the Surgeons-General of the Army and of the Navy be asked to furnish the Committee on Statistical Study of the Influenza Epidemic with data for military and naval populations of each encampment. The data thus furnished to be classified as outlined for the civil population in the foregoing resolutions. Further, be it resolved that data be supplied from these military and naval records on the duration of incapacity for military duty, such durations to be shown by "classified" days of disability. If possible, data should also be given with respect to the *sequelae* of influenza and pneumonia cases handled during the epidemic in the several camp hospitals.

19. Resolved: That the Surgeon-General of the United States Public Health Service be requested to prepare a digest of the sanitary regulations promulgated by his office prior to the epidemic, and those adopted during the course of the epidemic, in cities 25,000 population and more, for the prevention and control of influenza.

II. PATHOMETRIC STUDY OF THE EPIDEMIC.

Pathometry is herein defined as the mathematical study of epidemiological data. The subcommittee on pathometry of the influenza epidemic, working independently of the committee on registration and tabulation practice brought in a report as follows:

1. Minimum of data required for purposes of pathometric study of the epidemic.

(a) Deaths by ages—All causes of death: By weeks of life up to three months; by months of life up to one year; by single years of life up to five years; by five-year age periods thereafter up to age 65; all ages 65 and over to be combined; (b) the above divisions of the data to be classified as to sex. (We asked for further classing of these data by nationality, but later withdrew our request); (c) items under (a) and (b), immediately above, to be tabulated by calendar weeks of occurrence. Actual dates of death to be given, and weeks to end with midnight of each Saturday; (d) statistics of the causes of death are to be shown as follows: Ages under one year—Total "influenza" and "pneumonia, all forms"; total deaths showing "influenza" or "pneumonia, all forms," as secondary or contributing causes of death; total diseases of the respiratory system; total diseases of the gastrointestinal tract; total all other causes of death. Ages one year and over—Total "influenza" and "pneumonia, all forms"; total deaths showing "influenza" or "pneumonia, all forms," when classed as secondary or contributing causes of death; total all other causes of

death; (e) data specified (d) to be presented for the same sex and age classes as in (a) and (b) above.

The only apparent point of disagreement between the recommendations of the two subcommittees was in the specification of the classification by nationality and color, and by sex with age distinction for each of these classes. In the recommendations of the committee on tabulations and registration practice, only sex grouping was to be shown for age periods; in order to save tabulation work. The ruling of the general committee was that the registration and tabulation subcommittee's request should be final in this matter. Color or race distinction shall be shown only by calendar week or occurrence of death, except, perhaps, for cities where there is a sufficient colored population to make a special study desirable.

2. Norms of mortality during the months of September to December.

(a) Norms for infant mortality: The central analytical office will use the graduated weekly index of infant mortality prepared by the Prudential Insurance Company of America for the section of the country in which a particular state or city is situated. Local conditions and tabulation difficulties may require slight modifications in the index. For Southern states and cities, use the Central Atlantic Cities table.

(b) Norms of child and adult mortality: Mortality norms of "influenza," "pneumonia," and all causes of death combined are now under consideration by the subcommittee on pathometry, and a recommendation will be offered after the data recommended by the subcommittee on registration and tabulation practice have been collected.

3. Pathometric study of the data collected.

(a) Separation of mortality from September to December, 1918, above the norms for: (1) Infant mortality (classed as "birth mortality" and "true infant mortality"); (2) child and adult mortality.

(b) Analytic study of the data: (1) Fitting of curves to the observed data in "excess" of "normal" mortality. Computation of parameters of the equations and the constants of the distribution, mean, mode, dispersion (skewness, excess); (2) studying these curves with a view to: Locate the beginning, peak and ending of the epidemic in the several states and cities; ascertain the period of incubation, from the characteristics of the curves in the several states and cities, and especially from the Army and Navy statistics requested by the subcommittee on registration and tabulation practice in resolution 18 of the foregoing text; (3) correlation studies between infant mortality (especially "true infant mortality") and adult female mortality, ages 15 to 45 years, during the epidemic; (4) correlation, for adult population, between "influenza" and "pneumonia, all forms" rates and the rates of complicating and contributory causes.

It should be noted that the above suggestions and recommendations were outlined independently of the main committee. There were a few slight differences which were not relevant. The aim of the pathometric study of the data of the epidemic is to bring the available facts into relation with other epidemiological studies, especially those under way in Great Britain. The committee anticipates that conclusions of lasting value to the American public health movement will result from competent higher analysis of the data requested in this memorandum.

This report will be sent to all registrars of cities of 25,000 population and over and to all states. It is understood that, as herein given, the recommendations are subject to final approval by the assembled Section on Vital Statistics at its meeting in Chicago, December 9 to 12, 1918. No very marked changes are anticipated, however, and registrars may proceed with entire safety in the preparation of tabulation from the mortality records. The Committee on Statistical Study of the Influenza Epidemic will shortly send out standard blanks for the reporting of the tabulated facts as soon as the epidemic has subsided to a sufficient degree in the several states and cities to warrant the collection of a complete record. As soon as arrangements have been completed, a central compiling office will be designated. All offices contributing in any way to the combined experience will receive a copy of the finished results, including the mathematical analysis and interpretation of the statistics.

The foregoing resolutions and text were agreed upon by the following members of the committee who remained to vote:

I. Subcommittee on tabulation and registration practice: Charles Scott Miller, chairman; Seneca Egbert, H. F. Smyth, Louis Lehrfeld, Fredrick S. Crum, Frank W. Wright, John T. Black, Walter H. Brown, Alonzo Stewart George H. VanBuren, C. E. A. Winslow recorder.

II. Subcommittee on pathometry of epidemic: Charles C. Grove, chairman; Arne Fisher recorder; Horace C. Richards, Department of Mathematical Physics, University of Pennsylvania, and Robert Henderson, Actuarial Society of America, cooperating.

EDWIN W. KOFF, General Chairman

All communications on above matters, please address to the General Chairman, One Madison Avenue, New York City.

RESOLUTION ON THE DEATH OF DR. PUTNAM.

At a meeting of the Massachusetts Society for Mental Hygiene, held December 10, the following resolution was adopted:

"Resolved, that to this Society and the cause

it represents and particularly to the Executive Committee of which he was a most valuable member, Dr. Putnam's death is a severe loss. His keen interest and hearty coöperation in the work of the Society, his wise and impartial judgment, wide influence, and rare and winning personality will be sorely missed. Because of the example he set of abiding enthusiasm, indefatigable industry and thoroughness in every line of his chosen work, and because of the respect and admiration which his qualities and attainments brought him, it was a source of great satisfaction and pride that he should be one of our number."

It was voted that a copy of this resolution should be sent to his family and the *BOSTON MEDICAL AND SURGICAL JOURNAL*, and entered in the records of the Society.

CHARLES E. THOMPSON, *Secretary*.

EARLY SATIRE ON THE MEDICAL PROFESSION.

IN an issue of the *Lancet* for March 9, 1918, appears the following comment on two early satires on the medical profession, published in the 18th century:

"The 'Chinese Spy' of 1766 was perhaps justified in referring to 'physic, that dreadful science which has got the life of man within its gripe,' and to 'companies in Europe, who have a license to kill: their sentences of death a physician's prescription.' But this sounds strangely like some of our contemporary libels, though the assertion that 'at present anyone who pleases may practise physie' is unfortunately quite near modern fact. The Spy, ending his thesis in his brief letter to Pekin, decides that 'it were proper to suppress physie, that everybody, having no other recourse, might become his own physician.'

Whitaker Newman's very interesting 'Essay on the Principles and Manners of the Medical Profession' dates from 1783, and would seem to have become a stereotyped tradition with many later magazine writers. Newman writes feelingly of the 'dishonourable avidity for business, which stoops to any meanness to obtain it, and defective through ignorance or indolence, of real merit, disdains not to call in the unmanly aid of adulation, detraction, and foul-mouthed abuse.' But, adds the writer, the candidate for practice should remember that a rival may villify him as easily as he abuses an-

other behind his back. Mr. Newman refuses to enter into a detail of 'the frequent and frivolous animosities' which are the scandal of the profession. There are too many medical men, he opines, and this bad state of things will continue so long as apprentice fees are sought after by leaders of the profession. The apprenticeship system, according to Newman, tended to perpetuate ignorance or semi-education and to raise up an unprincipled generation of men, bred in drudgery and devoid of honour.

Satire on the apprenticeship system would be absurd in 1918, for the system has vanished, but our own contemporary satire seems often to be aimed at the class of young practitioners decried by Newman. The modern satirist of the school which Mr. Bernard Shaw represents differs entirely in one point from Newman. The modern hates the academic and hopes some day to see Harley street blazing with the 'brass plates' of the unqualified, which shall severally contain the legend—'No connection with the Medical Council.' Newman in his eighteenth century manner thinks that what the profession most lacks is academic training. 'The metropolis of England,' he writes in the age of the Hunters, 'is without a college or professorship adequate to the purpose of improving by theory and physiology its superior practical advantages.' To the absence of academic training Newman would have attributed the existence of the Bob Sawyers and Ben Allens who survived in the days of Dickens, though Dickens decorated the type out of all recognition.

Bad faith, malpraxis, heroic experimentation bred of ignorance, inexperience, the humbug of etiquette, and a deceptive and ingratiating bedside manner—all these are charged against medical men by the ancient satirists. We even find in the old satires the glib anecdote of the doctor who has himself called ostentatiously out of church early in the service. He is called out to give an impression of busy practice and also because, being an infidel by nature, he hates church! The medical man's smart equipage is still known to moderns, but is the descendant of an ostentation now impossible. Newman alludes to unheard-of display, but holds that 'the vivifying and cordial effects of an elegant chariot, and the specific qualities of a footman in livery, agreeably gild the pill, and happily disguise or relieve the awkward circumstances of illness.' The vulgar modern idea that the medical man experiments on his poorer patients is also antique, and was, perhaps, true when it was first conceived. It is certainly not true today, nor is the bulk of the old satire, however much its calumnious substance may be preserved in the writings of satirists ignorant of the trend of professional history during the last hundred years."

The Boston Medical and Surgical Journal

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FRACTURE OF THE NECK OF THE FEMUR.

By JAMES WARREN SEVER, M.D., BOSTON,

Junior Assistant Surgeon, Children's Hospital, Boston; Consulting Orthopedic Surgeon, Cambridge Hospital, Mass.; Orthopedic Surgeon, Waltham Hospital, Mass.

[From the Orthopedic Service at the Cambridge Hospital, Cambridge, Mass.]

THIS paper is presented with the idea first of offering certain data in regard to a number of cases of hip fractures studied by the author, and secondly, to bring before the medical profession certain facts in regard to the modern theories as to how this type of fracture should best be treated.

For several years now we have been assailed, first on one side and then on the other, by advocates of the plaster spica applied with abduction, by others who believe that abduction alone is not enough, but that artificial impaction must be used to insure a good result and that really abduction is not the *sine qua non* of success, and by others who believe that flexion at the hip and fixation in plaster in that position is the most essential way to bring about a good result. We have offered us, also, Buck's extension with and without lateral traction and extension by the

ice tongs method; also various operative procedure to fix the fragments by a nail or bone peg; and lastly, sand bags alone. Which way is the average man to turn, and what should be considered good advice and treatment? If it were his own hip what would he allow any surgeon to do with him?

It seems to me that it all comes down to a basis of common sense and a reasonable amount of anatomical knowledge plus a knowledge of what a hip fracture looks like in an x-ray before and after treatment as well as a visualization of the fracture itself *in situ*, and the relation of the fractured surfaces before, during, and after manipulation. Two other factors are of importance; first, surgical training and conscience in regard to what constitutes adequate treatment of any fracture; and second, the general condition of the individual patient whose condition, often in these cases, precludes any active treatment.

It will be my endeavor in this paper to discuss these various points so as to make clear to the reader just what I have in my own mind in regard to this type of fracture.

In the series reported in this paper there are 40 cases. Twenty-one of these are the so-called intertrochanteric type or those involving one or both trochanters, and the so-called sub-capital type where the fracture is located near the base

of the head at its junction with the femoral neck. Both types of cases require treatment, not radically different and apart from such circumstances as old age, obesity, and general weakness, essential to a result which should be better than is usual. Most hip fractures are neglected, and by that I mean, the case is not adequately treated. The reason for this, I believe, is that in the past we have all thrown up our hands at such cases and have been led to expect a bad result because we have always had them. The time has come for a change, and while a certain proportion of cases will have to be content with sand bags or even no treatment at all, others, who would in the past have also had nothing but sand bags, will and should have at least an anatomical chance to get a fair result on the same basis as any other fracture is treated.

In looking at the results of this series of 40 cases, there are only 9 which could be classed as good or fair; that is, these people have legs which they can walk about on and do their work without great discomfort or limp. This is approximately 23 per cent. Five were sub-capital fractures and four were of the intertrochanteric type. Of the sub-capital type, one was treated by sand bags, one with Buck's extension and three by the Whitman abduction method. Of the intertrochanteric type, one was treated by Buck's extension and later with a plaster spica, and three with sand bags alone. The average age of all the patients was 61 years, the youngest being 14 and the oldest 88 years. Three cases of sub-capital fracture in this series of 40 were forcibly impacted by Dr. Cotton by his method and the results are known in two of the cases. They are not classified in the nine known good results. (See table II, cases numbered 2, 23, 36.)

A further analysis of these cases classed as good results is shown in Table I.

TABLE I.

CASE	AGE	SEX	TYPE
1	14	F.	Sub-capital
17	47	M.	Sub-capital
18	60	M.	Sub-capital
19	24	M.	Intertrochanteric
33	73	F.	Intertrochanteric
37	14	M.	Sub-capital
39	18	F.	Sub-capital
32	73	F.	Trochanteric
25	78	F.	?

This shows five females and four males of all ages. From so small a number it would be obviously unfair to draw any deduction as regards types or ages as to what results should generally be expected.

A further study of the table will show that of the intertrochanteric type of fracture, 12 were treated alone by sand bags, 4 had the advantage of Buck's extension, two had a plaster spica, and two had a spica with extension. Of the sub-capital type four were treated by the Whitman abduction method, 7 by sand bags, three by the Cotton artificial impaction, and one by Buck's extension. The results have been noted above.

SUB-CAPITAL FRACTURE.

What are the anatomical relations following a fracture of the neck of the femur near the base of the head? The trochanter is dropped back of its usual level as well as displaced upwards, the dropping back takes place because the thigh occupies a higher or more forward position than the trunk when intact, but when broken the trochanter drops back from gravity alone, thus displacing the distal fragment behind the head of the femur. The carrying upward of the trochanter is due alone to muscle pull from unopposed muscles. The next deformity observed is that of outward rotation which is due in part to the shortening of the leg and the pull of the muscles, particularly the psoas and iliacus. The leg is also adducted, due to the strong pull of the unopposed adductor muscles.

The position is practically the same in complete and impacted fractures of this type, except that the trochanter is not apt to be quite as high or the shortening as great in the latter type. Following a complete sub-capital fracture an examination of the hip joint by inspection of the fresh fractured surfaces would show the following conditions. The distal fractured surface would lie well above and behind the level of the acetabulum and pointing inward and forward. The head would lie in the acetabulum, directed generally outward and forward and well in front of the neck. Obviously, to get these two surfaces together and hold them there would give one the best possible anatomical result so far as could be obtained. The question is how to do this.* First of all the shortening should be corrected by traction under ether so that with the pelvis held and square, the legs measure equally. Then the good leg is abducted fully and held in that position. The fractured leg is then abducted to its limit, about 45 degrees, meanwhile lifting the

* Whitman method.

trochanter upward, forward and inward so that it resumes its place at its normal level with the head. This is essential and it is also essential that the trochanter be supported during and after the application of the plaster spica. The rotation is corrected at the same time. The plaster is applied from the toes to the nipple line on the fractured leg and part way down the thigh on the good leg to insure stability. All this sounds easy, but it is not. Personal observation of fresh sub-capital fractures in the dissecting room have shown me that to get these two fracture surfaces in apposition by this manipulation alone is difficult and not always certain.

First of all adequate traction is needed and it is essential that it be maintained during the entire procedure. As the distal fragment comes down and is lifted forward it is apt to engage the edge of the head and carry it as a whole before it. The head is not firmly fixed in the acetabulum and rotates easily in any direction which makes it doubly difficult to insure good approximation of surfaces. It also leads one to wonder what happens when artificial impaction is practised. Rotation also has had the same effect on the head. Inspection under these conditions, however, does show that full abduction plus adequate traction does make the lower border of the capsule tight and brings the fractured surfaces in as good apposition as possible and holds them there, which is after all what is wanted. Never be afraid to abduct too far, for it cannot be done so as to do any harm, provided the length is maintained and the trochanter lifted well forward. The mere maintenance of the extreme abduction is enough to insure as good approximation of the fractured surfaces as can reasonably be expected as well as restoring as far as possible the normal anatomy of the femoral neck. No other fixation by any other method could do much more. The development of callus along the line of fracture is another matter and is not in the surgeon's hands. In this way the normal angle of the neck is restored as well as possible and by no other way. Artificial impaction before abduction simply fixes the leg in adduction, which is a bad deformity and constitutes a real disability and, to my mind, should not be practised. Therefore I feel that any hip showing an original impaction should be broken up and an anatomical position established in order to offer the patient the benefit of as good a result as

possible on scientific lines. Letting an original impaction alone results, if union is obtained, in a short, adducted and outwardly rotated leg, which should be avoided. I believe in the majority of cases, other things being equal, the results will be better if the impaction is broken up. Impaction after abduction offers nothing but more shortening of the already shortened neck and does not insure better results. Here again a visualization of the relation of the fractured surfaces is necessary and should be enough to hold one's hand.

INTERTROCHANTERIC FRACTURES.

This class of cases represents usually the larger class and generally no trouble is found in obtaining union on account of a better and more adequate blood supply. Here again the abduction method is the one to use "par excellence," and is the only one by which the deformity may be corrected. The deformity usually is about the same as seen in cases of sub-capital fractures, but the line of fracture is through the trochanter and along the intertrochanteric line. The patients have suffered in the past from the same apathy on the part of the medical man as have the others and really offer a better field for good results. The treatment is generally more simple, abduction alone generally results in an excellent position. There seldom being much or no over-riding or much displacement. There is, of course, the lessening of the normal angle of the neck with the shaft, resulting in the typical coxa vara deformity. All these cases should be kept in the plaster eight to twelve weeks to insure good union. The great difficulty in obtaining a good union and therefore a good result in cases of fractures of the sub-capital type is the poor circulation of the head of the femur, which is an important factor. Lexer's study of the blood supply to the neck of the femur has shown that the blood enters it at four points, all of which arteries reach the bone by way of the periosteum and the capsule. "This distribution was later more completely worked out by Waldenström* (to quote from Legg's paper) by means of vascular injections of crude turpentine and mercury. The radiographic study of these injected femora established the occurrence of (a) a vessel to the upper neck entering just above the great trochanter and giving a branch to the epiphysis

* See Osteochondral Trophopathy of the Hip Joint. Arthur T. Legg, Surg., Gyn. and Obstet., March, 1916.

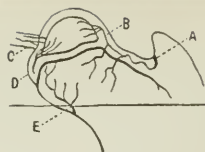
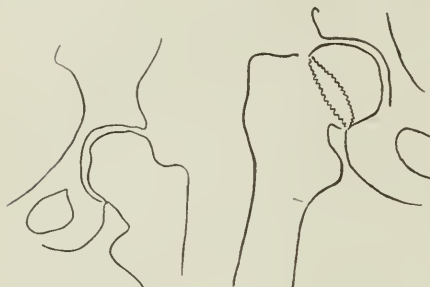
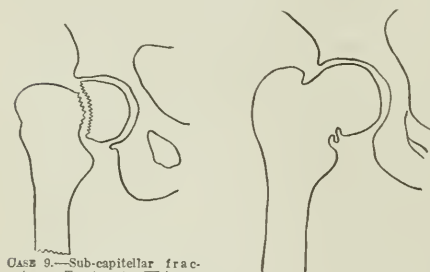


FIG. 1.—Adopted from Waldenstrom. A, Upper diaphyseal vessel giving a branch B to epiphysis; C, vessel entering through the ligamentum teres; D, branch to the lower side of the epiphysis; E, diaphyseal vessel to the lower side of the femoral neck.



CASE 1.—Seventeen months after fracture. Infantile paralysis. Whitman abduction method. Twelve weeks of plaster.

CASE 2.—Showing sub-capital fracture. Age 25. X-ray taken 2 weeks after accident. Cotton impaction. Result not known.



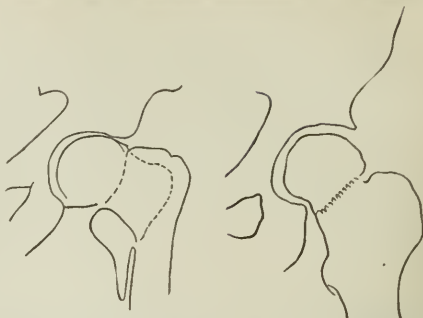
CASE 9.—Sub-capital fracture. Treatment: Whitman abduction method. See later x-ray.

CASE 9.—Six weeks later in plaster. Result not known.



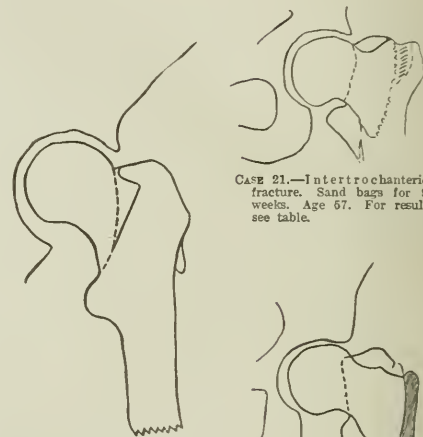
CASE 13.—Intertrochanteric fracture. X-ray taken day after accident. Result not known.

CASE 14.—Intertrochanteric fracture. Too fat for spica. Extension in abduction used without good result.



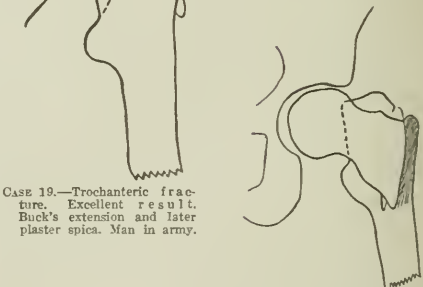
CASE 16.—Intertrochanteric fracture. Treated by sand bags and later by spica for five weeks. Subsequent result not known.

CASE 18.—Sub-capital fracture. Buck's extension for eight weeks. Excellent result. See table.



CASE 19.—Trochanteric fracture. Excellent result. Buck's extension and later plaster spica. Man in army.

CASE 21.—Intertrochanteric fracture. Sand bags for 9 weeks. Age 67. For result see table.



CASE 27.—Intertrochanteric fracture. Sand bags. Result not known. Age 65.

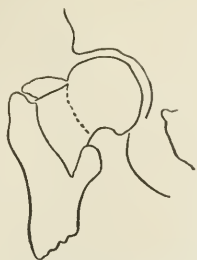


CASE 26.—Intertrochanteric fracture. See table.

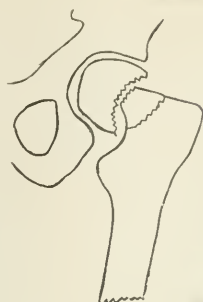
CASE 28.—Intertrochanteric fracture. Sand bags. Dead.



CASE 29.—Sub-capital fracture.
Dead.



CASE 34.—Intertrochanteric fracture. Buck's extension 6 weeks. Result not known.



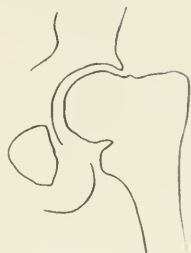
CASE 32.—Before reduction



CASE 32.—In plaster.



CASE 35.—Intertrochanteric fracture. Sand bags. Eight weeks. See table.



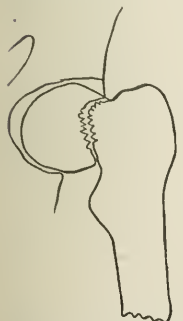
CASE 32.—Six months later. Good functional result. A recent plate shows practically the same condition.



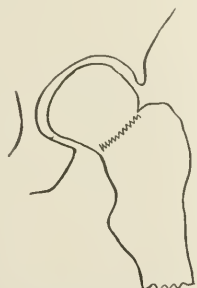
CASE 37.—Result good as to function. See table. Whitman method.



CASE 37.—Original fracture—sub-capital. Nov. 20, 1916.



CASE 38.—Sub-capital fracture before reduction. Age 60.



CASE 38.—Treated by sand bags alone. Fair result anatomically. See table.



CASE 40 (No. 1)—Age 77. Intertrochanteric fracture before reduction. Jan., 1918.



CASE 40 (No. 2)—After reduction in plaster. Died May, 1918. Never out of bed.

NO.	DATE OF INJURY	AGE	SEX	OCCUPATION	TYPE OF FRACTURE	TREATMENT	TIME IN BED	DISABILITY Permanent	Partial	RESULT AS FAR AS KNOWN	COMPLICATIONS
1	Jan., 1917	14	F.	School	Sub-capital	Abd. in plaster Whitman	3 months	None	None	Excellent	Old infantile paralysis with coxa valga which the fracture wholly corrected. See X-Rays.
2	June 26, 1916	25	F.	Housewife	Sub-capital	Cotton impaction cast	8 weeks	1 3/4" short		Not known	
3	April 27, 1914	88	F.	None	Sub-capital	Sand bags, 4 weeks Cast, 3 weeks	7 weeks	Leg 1" short and everted		Died at age of 91. Walked a little with a crutch and had constant pain	
4	May 12, 1915	88	M.	None	Trochanteric	Sand bags	7 weeks	Leg 1" short and everted		Died March, 1917. Result not known	
5	July 31, 1912	84	F.	None	Sub-capital	Sand bags	6 weeks	1" short and everted		Not known beyond immediate result	Discharged to tuberculosis camp on account of pulmonary tuberculosis
6	April 28, 1916	72	M.	None	Sub-capital	Sand bags	4 weeks	1 1/2" short		Died Feb., 1918, age 75, walked with 3/4" high sole, slight limp and crutches	
7	July 26, 1914	84	F.	None	Sub-capital	Sand bags	11 weeks	1 1/4" short and everted		Not known	
8	March 18, 1915	63	F.	None	Sub-capital	Sand bags	8 weeks			Not known	
9	July 23, 1912	59	F.	—	Sub-capital	Whitman abd. cast	10 weeks			Not known	See X-Ray before and after reduction
10	Feb. 2, 1917	68	F.	None	Intertrochanteric	Sand bags	10 weeks	1" short		Good union—good motion except in abduction	
11	Jan. 5, 1914	53	F.	—	Intertrochanteric	Sand bags	8 weeks	1 1/2" short		Not known	
12	Feb. 10, 1913	43	M.	Teamster	Intertrochanteric	Plaster spica in abd.	8 weeks			Good union, otherwise result not known	
13	Nov. 9, 1913	47	F.	Housewife	Intertrochanteric	Buck's extension	7 weeks			Jan. 22, 1914. No shortening, no other note	See X-Ray.
14	April 5, 1917	55	F.	Housewife	Intertrochanteric	Buck's extension	10 weeks	1 3/4" short		Leg everted, some limitation of motion at hip. Slight limp	Too fat for cast. See X-Ray
15	Nov. 5, 1915	74	M.	None	Intertrochanteric	Sand bags and later spica for five weeks	9 weeks	1 1/2" short		Limp and outward rotation of leg	

No.	DATE OF INJURY	AGE	SEX	OCCUPATION	TYPE OF FRACTURE	TREATMENT	TIME IN BED	DISABILITY Permanent	RESULT AS FAR AS KNOWN	COMPLICATIONS
16	Jan. 6, 1916	69	F.	—	Sub-capital	Sand bags	9 weeks		$\frac{1}{2}$ " shortening. Adducted and outward rotated. Limp, no pain in leg, cannot walk, uses crutches. Feb., 1918.	
17	June 30, 1912	47	M.	Laborer	Sub-capital	Sand bags	7 weeks	$\frac{1}{2}$ " short	Began to walk on leg about two months after leaving hospital. Limbs very little, wears a $\frac{3}{4}$ of an inch lift on heel, can walk three or four miles without trouble. Stands on feet all day very day	
18	Aug. 23, 1914	60	M.	Janitor	Sub-capital	Buck's extension	8 weeks		Began to walk about four months after leaving hospital. Is about on leg all the time without pain or limp	
19	Dec. 17, 1915	24	M.	Carpenter	Trochanteric	Buck's extension and spica	4 weeks	$\frac{3}{4}$ " short	This man writes Feb., 1918, that he is in the army, could not walk on leg for five months after leaving hospital and could not work for a year. Limbs a good deal if he walks any distance. Has a good deal of pain in leg. See X-Ray.	
20	Nov. 18, 1914	72	M.	—	Intertrochanteric	Sand bags	9 weeks		Dead from other causes.	Result not known
21	Feb. 17, 1915	67	M.	—	Intertrochanteric	Sand bags	8 weeks		Result not known	See X-Ray
22	March 22, 1917	86	F.	—	Intertrochanteric	Sand bags	9 weeks	$1\frac{1}{2}$ " short	Could not walk at discharge from hospital June 5, 1917. Had to stay in bed 5 months at home after leaving hospital. But weight on leg for first time in Oct., 1917, uses cane only now, Feb., 1918. Has about 2 inches shortening. Able to walk with cane or crutches.	
23	June 19, 1916	61	F.	—	Sub-capital	Cotton impaction plaster	11 weeks	?	Used crutches Oct. 28, 1916. Patient writes Feb. 11, 1918, that she wears a $\frac{1}{2}$ " lift on shoe, walks about home a good deal but with considerable limp and uses cane. X-Ray not to be found.	
24	May 21, 1916	63	F.	—	Sub-capital Impacted	?	Aug. 7, 1916		Patient writes Feb., 1918, that she was operated on by Dr. Brandegee March 28, 1917, on account of a loose fracture of the neck of the femur. Was in a cast to Sept., 1917. Since then has worn a leather splint. She is now getting weight on the leg and states X-Rays show slight union.	
25	June 23, 1914	78	F.	—	?	Buck's extension to July, cast applied and off in 2 weeks			Walked Sept. 10, 1914 with crutches for 6 months and then used one for a year. Now able to walk and go in and down stairs. Inmate of City Poor Farm.	
26	April 20, 1915	56	M.	—	Intertrochanteric	Sand bags and Buck's extension	9 weeks		Discharged walking July 5, 1915. No other results known. See X-Ray.	
27	Nov. 8, 1916	65	F.	—	Intertrochanteric	Sand bags		$\frac{3}{4}$ " short	Discharged Dec. 24, 1916. Not walking. No other results known. See X-Ray	

No.	DATE OF INJURY	AGE	SEX	OCCUPATION	TYPE OF FRACTURE	TREATMENT	TIME IN BED	DISABILITY Permanent	RESULT AS FAR AS KNOWN	COMPLICATIONS
28	Nov. 20, 1915	53	F.	—	Intertrochanteric	Sand bags			Died in hospital Feb. 4, 1918	See X-Ray
29	Oct. 13, 1914	76	M.	—	Sub-capital	None	1" short		Marked eversion and shortening. Died in hospital Nov. 3, 1914.	See X-Ray.
30	Aug. 19, 1915	76	M.	—	Intertrochanteric	None			Died August 25, 1915.	Pneumonia
31	Dec. 21, 1912	85	F.	—	Intertrochanteric	Bed			Died Dec. 30, 1912.	
32	Feb. 2, 1917	73	F.	Housewife	Trochanteric	Sand bags	12 weeks	$\frac{3}{4}$ " short	Feb. 1918, writes that she walked with crutches in May, 1917, in July, 1917, with cane, and in Nov., 1917, without cane. Left leg outwardly rotated, flexion at hip to a right angle, outward rotation free, inward rotation limited, abduction limited	
33	May 1, 1917	73	M.	—	Intertrochanteric	Sand bags	8 weeks	$\frac{3}{4}$ " short	April 25, 1918. Walks with a limp, legs lie outwardly; rotated, motion in flexion to a right angle, abduction limited.	
34	Aug. 1, 1914	80	M.	—	Intertrochanteric	Buck's extension	6 weeks		Not known. See X-Ray.	
35	Nov. 29, 1912	59	F.	Housewife	Intertrochanteric	Sand bags	8 weeks		Discharged from hospital Feb. 13, 1913. Was in hospital about 15 years before for fracture of other hip. No results known. See X-Ray.	
36	Feb. 12, 1916	51	F.	Housewife	Sub-capital	Cotton impaction Feb. 13, 1916; Cast off May 15, 1916			Discharged June 21, 1916. Writes Feb., 1918, that she did not walk on leg for about a year, limps a good deal, uses crutch and states leg is about 2 inches short. Is not able to do any work. Has some pain in leg.	
37	Nov. 19, 1916	14	M.	School	Sub-capital	Whitman Nov. 23, 1916; Cast off Jan. 8, 1917.	8 weeks		April 18, 1918. $\frac{3}{4}$ " short, good motion in flexion, abduction and adduction, slight limitation in inward rotation. No limp or pain. Working every day. See X-Ray.	
38	Jan. 18, 1916	60	F.	—	Sub-capital	Sand bags	?		Writes Feb., 1918. Uses two canes, limps badly, wears a $\frac{1}{4}$ " high heel. Not able to get out of doors. See X-Ray.	
39	Dec., 1917	18	F.	Tel. operator	Sub-capital	Whitman abd. cast on 12 weeks			July, 1918, walks in Thomas splint, leg $\frac{1}{4}$ " short, still slight limitation of motion at hip and slight permanent outward rotation. Has not walked yet without splint. Has no pain. X-Rays show apparent union. See X-Rays.	
40	Jan. 11, 1918	77	F.	Home	Intertrochanteric	Whitman abduction cast, 3 weeks	5 months	Total	Died in hospital, May, 1918.	

of the head, (b) a vessel on the under side of the neck, (c) a small vessel to the under portion of the epiphysis similar in distribution to the epiphyseal branch of (a) above, and (d), a vessel of small size and limited ramification on passing into the epiphysis through the ligamentum teres." (See cut.)

"Lexus† states that the blood supply is greatest in childhood, and that in adult life the most marked change is seen in the diaphyseal group of arteries supplying the shaft, which become smaller and smaller with advancing age." The fracture must consequently have a profound effect on the circulation of the head fragment, which is practically cut off by the loss of continuity of bone."

The more accurate bone approximation obtained by manipulation and fixation the better chance consequently for a good result. Any thing short of that merely insures a bad result.

X-RAY INTERPRETATION

The study of any number of x-rays of hip fracture will show that they are most difficult of accurate interpretation. Knowing the anatomical relation of the fragments, the x-ray will give one the impression that the parts are in apposition or even impacted. The overriding and displacement will not be clearly shown, and only by careful stereoscopic plates, or even by lateral views, a method much neglected and not well developed, will the true relation be brought out. One should not place too much reliance on x-rays alone, but x-rays plus clinical findings will give one a better idea of what the actual conditions are.

SUBSEQUENT TREATMENT.

The subsequent treatment of these cases is of no small importance. After the bed treatment is over, the patient should be fitted with a Thomas splint, jointed if necessary, at the knee and fastened into the shoe, so that when the patient puts the foot to the ground the weight of the body will be carried by the splint and not on the hip joint. At first this splint is to be used with crutches but later they can be dispensed with. The splint should be worn at least six months in any case where union is suspected. It is, of course, taken off at night.

† Fracture of Neck of Femur. A. McIlannan, Surg., Gyn. and Obstet., March, 1916, Vol. xxii, No. 3.

In the old cases of fracture of the hip, that is, those cases not alone old in point of years but in time since the injury and showing no union, the problem, I believe, has best been answered by Dr. Brackett, who has devised a method of inserting the end of the great trochanter, after remoulding it, into the atrophied head, which is *in situ*. It is an operation, of course, only for selected cases, but certainly offers a good deal, and in his recent paper he reports nine cases with seven good results.‡

This paper is really an effort to arouse the medical profession to a greater interest in this class of cases. The results in practically all series of cases reported are bad, as a whole. The treatment has been bad, and while the results are bad, they should show a better per cent. of good results than we have had up to the present if, in the future, the cases will be treated on an anatomical basis and the patients given a chance, providing their general condition and age warrant it.

EXPERIENCE OF MASSACHUSETTS STATE SANATORIA FOR TUBERCULOSIS DURING THE RECENT INFLUENZA EPIDEMIC.

By JOHN B. HAWES, 2ND, M.D., BOSTON.

At a meeting of the Board of Trustees of Hospitals for Consumptives, held September 10, 1918, I called the attention of the trustees to the epidemic of influenza then prevalent among the naval forces situated in Boston, and urged that every possible measure be taken by the superintendents of our State sanatoria to prevent a spread of the disease among the patients at these institutions. The fact that there are four large sanatoria for consumptives under the control of this Board, the North Reading, Lakeville, Westfield, and Rutland State Sanatoria, comprising a total of 1065 patients, and a total population, including employees, of 1512, made it very important to take measures in this regard. Now that the epidemic in Massachusetts is practically over, it has seemed to me that a brief description of the experience of our

‡ Treatment of Old Ununited Fracture of the Neck of the Femur by Transplantation of the Head of the Femur to the Trochanter. E. G. Brackett and W. S. New, BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxxvii, No. 11, September 15, 1917.

Massachusetts State Sanatoria in preventing as far as possible the outbreak of influenza among the patients, and its control among those patients who contracted it, will be of some interest and value.

The superintendents of our four State sanatoria have very kindly given details of the measures they each took.

NORTH READING STATE SANATORIUM.

At the beginning of the outbreak Dr. Carl C. MacCorison, Superintendent of the North Reading State Sanatorium, cautioned patients and employees, and advised them how to avoid infection, and suggested strongly that they remain close to the institution. When the epidemic began to assume serious proportions a strict quarantine was established. This meant that patients were not allowed to see visitors, and were forbidden to leave the grounds. In several instances the relatives of patients died, and the patients felt that they must go home. These people are still at home with the understanding that they can be re-admitted when conditions are safe. With the employees the quarantine was less effective. Each employee was asked to remain at the institution unless it was absolutely necessary for him to leave, in which case he was to report immediately to the physician on his return. For the most part the employees cooperated very well. A few did pretty much as they pleased, and these were watched carefully. Dr. MacCorison feels that the patients appreciated the fact that their interests were being safeguarded, although toward the end of the quarantine they became restive, and asked for leaves of absence, and that their relatives might see them, which was, of course, perfectly natural.

Seventy-two employees received Dr. Leary's vaccine. This included the prison laborers. One prisoner received the vaccine twice, but refused the third dose, and he is the only person receiving the vaccine that later came down with influenza. No patients were given the vaccine. There were several employees sick with very mild symptoms of questionable influenza, but the symptoms were more those of a cold. With the exception of one man, the cases at this institution were very mild.

LAKEVILLE STATE SANATORIUM.

Dr. Sumner Coolidge, superintendent of the Lakeville State Sanatorium, excluded all vis-

itors from the sanatorium during the period of quarantine, except the friends of the various sick ones, who were seen in private rooms. Patients and employees were advised to avoid close personal association and to avoid droplet infection. Leaves of absence for patients were discontinued. It is interesting to note that there was no case of influenza among the patients, nor among the employees living at the sanatorium. This may well be looked upon as a remarkable record for which Dr. Coolidge is to be congratulated.

At Lakeville, 49, or one-half the employees, were vaccinated. This took in the entire nursing force, office force, engine help, one clergyman, medical staff with one exception, herdsman and two of his family, yardman and laundryman. Dr. T. J. Leary's vaccine was used. The following were not vaccinated: All male waiters, four laundry employees, five engineers, the entire farm help, including ten prisoners, and all the patients. There was no case of influenza among the patients, nor among the employees living at the sanatorium. Among the employees living in their own homes, however, there were seven severe cases, two doubtful cases, and among the families of these employees, living at their homes, there were three deaths.

WESTFIELD STATE SANATORIUM.

Dr. Henry D. Chadwick, superintendent of the Westfield State Sanatorium, refused all leaves of absence, and allowed no visitors. The employees were requested to avoid going to town, and most of them heeded this regulation. The first cases were two employees, one of whom had returned from a vacation and the other from a visit to Boston. The first ward case was a boy from Gloucester admitted to the children's ward on September 21. Immediately after other cases developed in that ward, up to a total of 34, the last case being on October 1. In the girls' pavilion there were nine cases, evidently due to an attendant who came back from a vacation already infected, but with very slight symptoms. She worked two days in the ward before becoming sick enough to give up. For treatment Dr. Chadwick found tincture of aconite in doses of one to five minims hourly in the febrile state, and with children, combined with sweet spirits of nitre, was very effective.

There were four deaths at this institution from influenza, two children and two men, all

of whom had advanced tuberculosis. The vaccine was not used at Westfield.

RUTLAND STATE SANATORIUM.

Dr. Ernest B. Emerson, superintendent of the Rutland State Sanatorium, reports that the influenza began to show itself in epidemic form the week beginning September 15, the first case being an employee who had returned from a vacation. At this time there were 360 patients and 160 employees in the institution. A quarantine was immediately established. No patient was allowed to receive visitors unless dangerously ill, nor allowed to leave the institution. If necessary for him to leave the sanatorium he was not allowed to return. This quarantine was maintained until the epidemic subsided. At one time, Dr. Emerson and every member of his staff were ill with the disease.

The vaccine was given at the height of the epidemic, and the only cases developing afterwards were among *those who had received the vaccine*. Dr. Emerson does not believe that the vaccine had any effect. It appeared to him that the disease had about run out when it was given, and that those who were spared were more or less immune. The cases coming down after being vaccinated did not differ materially from the unvaccinated. He has not noted any material change in the tuberculous process in those patients who had influenza.

The fact that Rutland is reserved for incipient and favorable cases, the majority of whom are up and around, perhaps made his problem a little more difficult than at North Reading and Lakeville, where 80 to 90 per cent. of the patients are in the fairly advanced stages.

Two hundred and four of the patients at this institution were given three doses each of Dr. Leary's influenza vaccine; of these eight cases developed influenza, of which seven were mild, and one severe; all recovered. Fifty-nine employees were given three doses each of the vaccine; of these one case developed mild influenza. This gives a total, therefore, of nine cases of influenza, all mild but one, among 204 patients and 59 employees, who were given vaccine.

It is interesting to note that there were no

cases among the unvaccinated patients and employees after the 263 had been given vaccine. The only possible deduction to draw from this, as far as I can see, is that by this time the disease was well recognized to be in epidemic form, the dangers of its spread understood, and precautions taken against this. I do not see that this particular fact proves anything one way or the other concerning the efficacy of the vaccine.

It has been extremely interesting to me that the testimony of our superintendents and their assistants is that an acute influenzal attack, usually associated with broncho-pneumonia, of greater or less severity, has had remarkably little effect on the already existing tuberculous process as far as increasing its spread or its activity is concerned. In my own clinic at the Massachusetts General Hospital, as well as in my own private work, I am able to confirm this opinion.

The figures in regard to the occurrence of cases among patients and employees, use of vaccine, etc., are presented below.

I do not feel that one is able to draw any conclusions of particular value concerning the efficacy of influenza vaccine in preventing the spread of influenza. Dr. Emerson, of the Rutland Sanatorium, apparently seems to feel that it was of little or no value. Dr. MacCorison, of the North Reading Sanatorium, has figures which seem to show that it was of some help at least. My own opinion is that in no case did it do any harm, and that, perhaps, it did some good. At the Massachusetts General Hospital, by order of the Executive Committee, nurses and others who had received this vaccine were not allowed to go on duty in an influenza ward for a week after the first injection. The physicians in charge seemed to feel that there had been a larger number of nurses come down with the influenza shortly after receiving vaccine than ought to have been the case. In my own work I am not able to confirm this fact, nor does it seem logical to me, nor have the superintendents of our sanatoria been able to produce any confirmatory evidence in regard to this. Personally I would attribute it to the fact that these nurses were already infected at the time that they received the vaccine.

	TOTAL POP.	No. OF PTS.	No. OF EMP.	No. VACCINATED			TOTAL No. CASES INFL.			
				Pts.	Emp.	Total	Pts.	Emp.	Total	Deaths
North Reading State Sanatorium	265	195	80	0	72	72	9	8	17	0
Lakeville State Sanatorium	357	259	99	0	49	49	0	0	0	0
Westfield State Sanatorium	370	265	104	0	0	0	46	7	53	4
Rutland State Sanatorium	520	360	150	204	59	263	66	32	98	8

COMPLEMENT FIXATION IN TUBERCULOSIS.*

BY HARRY L. BARNES, M.D., WALLUM LAKE, R. I.,

HARRY S. BERTON, M.D., PROVIDENCE, R. I.

THE difficulty in distinguishing tuberculosis which is active from that which is inactive or from other diseases which simulate it, has led to attempts at complement fixation. This paper records our attempt at complement fixation in 279 patients of the State Sanatorium at Wallum Lake, R. I. The sera were brought to the State laboratory within 48 hours and in all but 30 cases within 24 hours. Three hundred and ninety tests were made.

TECHNIQUE.

Patient's Serum: The sera were inactivated in a water bath for one-half hour at 57°. One-tenth c. c. of inactivated serum was used.

Antigen: Tubercle bacilli were dried, powdered, and subsequently boiled with glycerine. One-tenth c. c. of a 1 to 25 dilution was used as the binding unit. This antigen prepared at the Trudeau Sanitarium was furnished us through the courtesy of Mr. Petroff.

Hemolytic System: The sheep cell-rabbit amboceptor system was employed with guinea pig complement. Two units of amboceptor determined by titration were used in the test.

The inactivated serum, antigen, complement, and amboceptor were kept in the water bath for one-half hour in one series and for one and one-half hours in a second series before the addition of the washed sheep cells. Incubation in the water bath was continued for one hour after the addition of the washed cells. The results were then noted. The tubes were kept in the ice-box over night for a second reading.

As the percentage of positive reaction was low, a new supply of antigen was obtained from Mr. Petroff and in 109 cases comparative tests were made from the old and new antigens, sufficient blood being taken from the patients at one time. The number of sera in which the two antigens gave a different reaction was 12, or 11 per cent. The old antigen gave 8, or 15 per cent. more positive reactions than the new.

RESULTS.

The number of cases in the several stages and

the percentage of each class giving a positive reaction is shown in the following table:

		CASES	PER CENT. POSITIVE
Stage I. . . .	{ A	26	0
	{ B	12	25
	{ C	2	0
Stage II. . . .	{ A	32	12
	{ B	123	21
	{ C	13	30
Stage III. . . .	{ A	3	0
	{ B	33	36
	{ C	21	57

The percentage of positive reactions to the test in the different clinical groups was as follows:

In the 279 cases—21%.

In 160 cases having t. b. in the sputum—28%.

In 119 cases having negative sputum—10%.

In 102 cases having fever over 100 within a month—31%.

In 90 cases with pulse averaging over 100F—24%.

In 20 cases in which a loss of 5 lbs. had occurred within the month preceding the test—20%.

In 25 children 2, or 8%, were positive.

Results in cases having complication or some thing of special interest were:

CLINICAL DIAGNOSIS	COMPLEMENT FIXATION	
	Positive Cases	Negative Cases
Tuberculous adenitis	—	3
" larynx	4	10
" peritonitis, active	—	2
" peritonitis, arrested	—	1
" pleurisy with effusion	—	2
Tuberculous empyema, discharging	—	2
Tuberculous enteritis	10	9
" fistula in ano	—	3
" spine, arrested	—	1
" hip joint	1	—
" knee joint, questionable	—	1
Tuberculous metatarsal bone	—	1
" epididymitis	—	1
" lung, healed 2 yrs.	—	2
" lung, healed 14 yrs.	—	1
Nontuberculous	—	2
Tuberculous lung with diabetes	1	—
" lung with asthma	—	2

The fact that only 21 per cent. of the whole series was positive was disappointing and may have resulted from some unrecognized defect or technique. As we always have a considerable percentage of cases undergoing arrest and many children in the quiescent stage, a considerable percentage of negative reactions was to have been expected. Other observers have failed to get a high percentage of positive reactions. Brown and Petroff, for instance, got only 51 per

* Read before the Rhode Island Medical Society, at Wallum Lake, Sept. 5, 1918.

cent. of positive reactions in incipient cases on admission and 80 per cent. in moderately advanced cases. As the test was negative in so many far advanced cases it is clear that a negative complement fixation test like a negative sputum test has no value in excluding tuberculosis. In favor of the test it must be conceded that the febrile and hemorrhage cases had from three to four times as many positive reactions as the quiescent children; the positive sputum cases three times as many reactions as the negative sputum cases; and the 1-A' cases were all negative, while the 3-C cases were 57 per cent. positive. These facts indicate a general tendency for the test to point in the right direction. Possibly a new antigen may be found which will greatly add to the value of the test.

If we cannot depend on the test to indicate active tuberculosis when present, can we depend on active tuberculosis being present when the test is positive? A conclusive answer to this question would require autopsies and a great number of tests in healthy individuals as well as in quiescent cases and we did not have the healthy material available. As bearing on this point it should be noted that in the 11 patients having negative sputum but positive complement fixation, there had recently been laryngitis in one case, pleurisy with effusion in one case, hemoptysis in two cases and febrile attacks in eight cases, none of the eleven cases being free from recent symptoms of active tuberculosis. This is strong evidence, if not proof, that, in these 281 cases, a positive reaction occurred only when active tuberculosis was present.

CONCLUSION.

As positive reactions to complement fixation occurred in only about 30 per cent. of progressive cases and in only 9 per cent. of negative sputum cases, the test was of slight diagnostic value in this series of cases.

Medical Progress

RECENT PROGRESS IN NEUROLOGY.

By ISADOR H. CORIAT, M.D., BOSTON.

THE NEUROLOGY OF EXOPHTHALMIC GOITRE

As a result of investigations in visceral neurology, F. M. Pottenger (Endocrinology, Vol. 2,

No. 1, 1918) was impressed with the unsatisfactory theories which had been offered to explain the clinical nervous phenomena which accompanied exophthalmic goitre. The disease in the past had been approached from much too narrow a standpoint, attention having been centered too much on prominent symptoms. A broader discussion of the disease should comprise the vegetative nervous system, the central nervous system and the various glands of internal secretion.

Exophthalmic goitre is an extremely complex picture in which the clinicians have emphasized to too great an extent the exophthalmos, tachycardia and increased thyroid secretion, which are manifestations of irritation of sympathetic fibres. The real picture is that of a rapidly destructive metabolism dependent apparently upon the thyroid hypersecretion and its influence on the nervous system and other endocrine glands. The relationship of the three prominent symptoms, exophthalmos, tachycardia and thyroid hyperactivity is not at all clear. These may all be evidence of the same stimulation of the cervical sympathetic fibres, or the thyroid gland may be diseased primarily and the efferent impulses from it so irritate the nerve cells of the cervical sympathetic ganglia as to cause the marked stimulation of those motor neurons which supply the muscle of Müller and the heart and so cause exophthalmos and tachycardia.

If exophthalmos and tachycardia result from stimuli which emanate from the diseased thyroid, the synapse in all probability occurs in the cervical sympathetic ganglia, and the reflex would be the proof that the sympathetic ganglion cells have the reflex properties of the cells of the central nervous system.

There seem to be two predominant etiological factors in hyperthyroidism; deep emotions, sexual excitement and fear; the other, infections of the nasal sinuses and tonsils, alveolar abscesses and pulmonary tuberculosis. Concerning the latter, Pottenger has been impressed with the frequency with which an enlargement of the thyroid gland has been found in the early active stage of pulmonary tuberculosis.

Omitting the three localized cervical sympathetic symptoms, exophthalmos, enlarged and functionally hyperactive thyroid, and tachycardia and omitting also the increased activity of the adrenals, most of the common visceral symptoms of this disease such as von Graefe's

sign, excessive sweating, diarrhoea, etc., seem to manifest themselves in parasympathetic rather than in sympathetic stimulation. The variability of the symptoms seems to depend on the sensitizing influence of thyroid secretion upon nerve cells, lowering the threshold of response to nerve stimulation on the one hand, and to the natural, underlying, predisposing nerve tonus as described by the terms sympathicotonic and vagotonic by Eppinger and Hess and the relative tonus of these two divisions of the vegetative nervous system in different organs of the same individual.

While Pottenger's article was taken up with more strictly physiological and speculative questions, a recent paper by L. F. Barker (*J. A.M.A.*, Vol. LXXI, No. 5, 1918) discusses the nervous and mental symptoms in exophthalmic goitre from a clinical standpoint. The wide variability of the symptoms is clearly emphasized. Toxic degenerative processes involving the peripheral motor and sensory neurons are only occasionally met with, while palsies of the cranial nerves are far more frequent, such as ophthalmoplegias or the clinical picture of a bulbar paralysis, resembling a myasthenia gravis. Grosser lesions of the brain and spinal cord have occasionally been encountered in exophthalmic goitre, but in many cases the relation is only an accidental one. The evidence for an epilepsy of thyrotoxic origin is still too incomplete to permit of a safe judgment. The fine tremor which is so characteristic of exophthalmic goitre is probably of cerebral origin although its real pathogenesis cannot be explained any more than other pathological tremors.

Neurasthenic anxiety, phobic and obsessional states are frequent in cases of exophthalmic goitre, while the psychoses, particularly various forms of depression, are not uncommon. Even the mild cases of exophthalmic goitre show neurotic symptoms more or less clearly defined.

(One of the most common mental accompaniments of exophthalmic goitre seems to be a sort of undifferentiated depression. In many of the cases of anxiety neurosis or anxiety hysteria, one often finds symptoms which are extremely suggestive of hyperthyroidism, such as excessive sweating, tachycardia, fine tremor, dermatographia and slight exophthalmos. These symptoms are probably secondary to the extreme emotional reactions of psychoneuroses. In one case of exophthalmic goitre there was an extreme

muscular fatigue resembling a myasthenia gravis. This symptom disappeared after a successful thyroidectomy. In another interesting case the enlarged thyroid pressed upon the phrenic nerve causing a persistent and severe hicough, which disappeared after removal of thyroid gland. The relation of the disease to the sexual glands is shown by its appearance during the menopause or its appearance and fluctuations during pregnancy. Concerning its emotional origin, we have seen the sudden appearance of exophthalmic goitre after an emotional shock, this being in harmony with our present knowledge of the effect of the emotions on the ductless glands and the internal secretions.—I. H. C.)

WAR AND NEUROSIS.

In his capacity of psychiatrist to the Military Hospitals Commission of Canada, Clarence B. Farrar (*Am. Jour. of Insanity*, Vol. LXXIII, No. 4, April, 1917) makes some interesting and valuable observations on the war neuroses as observed in the Canadian Expeditionary Forces. In summing the effect of war on the central nervous system, he concluded as follows:

"Cases with gross lesions of nervous tissue, peripheral or central, present questions essentially surgical and neurological. Specific psychotic symptoms do not, as a rule, accompany them. In particular such lesions do not give rise to the so-called traumatic neuroses.

"Apparently any individual of sound constitution and inheritance may at the front exhibit minor, transitory neurotic symptoms which are strictly reactive and may be classed as physiologic.

"That the severe war neuroses may also, under certain circumstances, develop in persons apparently quite normal has been asserted by competent observers; but the concept of normal is so elastic that a definite answer to this question may never be forthcoming.

"It remains true, however, that in the majority of severe war neuroses of all types there is evidence of a personal element of psychopathic potential.

"The factor of exhaustion may lead to collapse or to acute transitory fatigue states, and if severe and protracted, to progressive physical deterioration. War has not established its etiologic importance in the neuroses or psychoses.

"Psychic disturbances among troops may be accidental, *i.e.*, such as occur in the community generally, and cannot be attributed to the service; and reactive, those which stand in some specific relationship to the conditions of army life.

"The reactive group is made up essentially of psychoneuroses, which may be divided epochally into anticipatory neuroses, and trench neuroses.

The type of trench neurosis is the condition called 'shell shock,' which usually consists of a transitory concussion syndrome followed by a more or less protracted neurotic phase.

"Trench neuroses occur usually in unwounded soldiers. There is no satisfactory evidence that trauma plays any part in their causation. There are well-qualified observers who hold that as a result of contemporary military experience, the concept of the so-called traumatic neuroses should be abolished.

"The drift of opinion is unmistakably toward the psychogenic basis of war neuroses of all types, including shell-shock. Even in an initial unconsciousness or twilight state of some duration there is evidence that the psychogenic element may have as great if not a greater rôle than the item of mechanical shock, although this is also important.

"Clinically the trench neuroses present in the main hysteric and depressive-neurasthenic syndromes or combinations thereof. In this sense therefore there is nothing specific or new about them.

"Their distinctive character resides in the fact that the precipitating causes are unique and strongly color the symptom pictures; further in the conspicuous reactive motor phenomena, and in the more or less specific ideogenic moments."

By far the most fundamental contribution to the subject of the war neuroses, is a long paper by John T. MacCurdy, *Psychiatric Bulletin*, July, 1917). Here the war neuroses are interpreted from the psychoanalytic standpoint, as manifestations of unconscious factors immediately determined by conditions of modern warfare and having a symptomatology whose content is directly related to war. He objects to the picturesque and alliterative term of 'shell-shock' from a purely medical standpoint, as in the first place it implies a single etiology, the physical effects of high explosive shells on the

central nervous, and secondly, the clinical types covered by this diagnostic term are too varied to be safely gathered under one heading. The National Committee on Mental Hygiene has also recently emphasized that "shell-shock" is not a medical term.

It is impossible to do more than briefly indicate the main theme of Dr. MacCurdy's paper. It will repay reading in the original since here is found, not vague clinical descriptions, but a minute psychological study of the war neuroses.

The two principal forms of the war neuroses are the anxiety states and the conversion hysterias. In the anxiety states, it is pointed out, and this observation can be confirmed by clinical experience, that the fear in the dreams of these individuals is always infinitely greater than the fear while awake in similar situations. Fatigue is a very important factor in the production of anxiety states. The part played by concussion in these conditions, he believes to have been over emphasized although its importance must not be under estimated in certain cases.

The conversion hysterias present certain difficulties of interpretation, although in all these cases an idea is transferred into a physical symptom. A difficult problem is to differentiate a conversion hysteria from malingering. In the former the symptoms are based on an unconscious wish, in the latter the wish is a conscious one. The treatment of the war neuroses is essentially symptomatic and psychotherapeutic. In its prevention, early rest after a campaign strain is emphasized, while individuals in civilian life who show neurotic tendencies and are ill-adapted to normal surroundings are very prone to develop a war neurosis.

(The fact that cases are often encountered in private practice showing the symptoms of so-called "shell-shock" and following accidents or emotional strain, shows that concussion from high explosives has been over emphasized or at least is only one of the factors in the production of a war neurosis.—I.H.C.)

CANCER IN THE CENTRAL NERVOUS SYSTEM.

In an experimental and clinical study of the metastasis of cancer in the central nervous system (*The Journal of Nervous and Mental Diseases*, Vol. vi, June, 1917) Levin gives the clinical record of six cases. From these he concluded that these metastases occur very early in the central nervous system and this in itself is an important reason for the failure of clinicians

to make an early diagnosis. A metastasis in the central nervous system may give no clinical symptoms during its entire course and it is even probable that those cases which ultimately develop severe clinical symptoms may have existed for a certain time without causing any manifestations attributable to the nervous system.

Benign tumors of the brain are encapsulated and during their growth compress the brain, increase the intracranial pressure and therefore produce early symptoms. Carcinoma and sarcoma grow invasively and destroy brain tissue during their growth, and consequently the combined amount of tissue inside the skull does change. Therefore no symptoms manifest themselves until a vital portion of the brain has been destroyed. The second and by far the more important handicap to the correct diagnosis of a metastasis in the central nervous system is due to the fact that the primary tumors may be so insignificant in comparison with the condition in the central nervous system that they escape recognition. In metastases of carcinoma of the spine the primary malignant tumor escapes notice even more frequently.

The very important conclusion to be drawn from the analysis of clinical cases of metastasis of carcinoma in the central nervous system is that the clinician must keep in mind the probability of cancer just as steadily as that of syphilis or tuberculous.

(In some recently observed cases of carcinomatous invasion of the central nervous system from the primary focus in the breast, the metastasis took place in spite of a radical operation and prolonged x-ray treatment. In two cases the clinical symptoms pointed to a metastasis in the cerebellum, in the third the invasion was more extensive, involving with the cerebellum and the cortical sensory areas. In this case, although the symptoms of intracranial pressure were clear as manifested by headache and vomiting, yet the x-ray of the skull showed but little evidence of increased intracranial pressure. This observation harmonizes with Levin's statement.—I. H. C.)

THE PSYCHOANALYTIC TREATMENT OF THE PSYCHONEUROSES.

In order to meet the criticism which had been so often directed towards the psychoanalytic treatment of the neuroses, viz.—that there were

no statistics available showing the practical results of this method the same as in other departments of clinical medicine, Coriat (*The Psychoanalytic Review*, Vol. iv, No. 2, April, 1917) undertook to analyze ninety-three cases of various psychoneuroses and of certain psychoses which had been subjected to the psychoanalytic treatment. The figures were based entirely upon personal investigations and experience. So far as known, this is the first statistical study of psychoanalytic therapy.

Some of the cases were quite severe, while others were mild, but in a large majority of these cases other methods of treatment, such as drugs, rest, electricity, explanation and the various ordinary methods of psychotherapy had been tried in vain. In fact, in certain of these cases, considering the inefficiency of other therapeutic methods, it seems justifiable to state that the neurotic condition would have gone on indefinitely, had not psychoanalysis been utilized.

In the sexual neuroses, such as homosexuality, psychoanalysis was the only method which offered any hope of a cure or even an amelioration of the condition. In a large percentage of cases also, psychoanalysis was used as a last resort after other therapeutic procedures had been vainly tried.

The results in those cases where a complete psychoanalysis was done, were most gratifying and may be summarized as follows:—The cases to which psychoanalysis is applicable consists principally of the severe hysterias, the compulsive neuroses, the sexual neuroses, particularly homosexuality, stammering, the anxiety neuroses, and finally certain psychoses such as the paranoid states, manic-depressive insanity and the early stages of dementia praecox. In fact, concerning the latter, it was possible to record two recoveries out of five cases treated. (See Treatment of Dementia Praecox by Psychoanalysis—*Journal of Abnormal Psychology*, Dec., 1917). In these two recovered cases, not only did the mental symptoms disappear, but the social reaction became normal again after a long period of withdrawal from reality.

The largest percentage of recoveries was in homosexuality, while in stammering, which is really a severe form of anxiety neurosis, no complete recovery was recorded although all the cases showed a great improvement. In the anxiety and conversion hysterias the results were also gratifying, while the anxiety and compulsive

neuroses presented more serious difficulties in treatment.

The duration of treatment in the various neuroses varied from a month in the mild cases to four or six months in the more severe types. The psychoanalytic method is particularly applicable to those psychoneuroses which have failed to improve under any other procedure and it is the only method which penetrates to the fundamental basis of the neurosis and so effects a radical cure. Other methods merely teach or train the sufferer to evade his disturbance; psychoanalysis reaches the basis of the nervous disturbance and by so doing eliminates it.

Book Reviews.

Le Cabanon. By DR. LUCIEN-GRAUX. Paris: A. Malone & Son. 1917.

This work deals with the various methods employed in the treatment of the insane, from the Middle Ages to the present day. The book is divided into two sections: the first is a historical account of the history of the cell; the second is composed of letters received from people whose opinions are of professional value, and who have been asked to contribute their ideas on this subject.

The first section shows the gradual transformation from the days when cells and dungeons were in vogue to the present time when the necessity of solitary confinement has been reduced to a minimum, and humane asylums have been instituted as a refuge. In the Golden Age, in Egypt, Greece, and Rome, the origin of the cell may be found. In the days of antiquity the affliction of madness inspired more respect and commiseration than terror, and the victims were confined in temples by the priests. The early Christian era set back the welfare of lunatics. Religious Christians resorted to the funeral-pile and dungeons to drive the supposed devil from the soul of the madman. At the end of the Middle Ages there was no special establishment for receiving and taking care of the insane; they were placed in prisons with criminals and suffered the tortures of strait-jackets and chains. The first asylum was established in Sweden in 1305. Later, religious orders of Spain saw the asylum in existence in the Orient and in North Africa, and, in the Fifteenth Century, they instituted in Spain this custom of segregating the insane in a building solely for that purpose. Italy followed in the 16th Century and Germany, France and England accepted the reform a little later.

Not until the 17th Century did any feeling of philanthropy enter, and little was done to mitigate the horrors of the cells until the 19th Century. Then psychiatrists began to protest about the abuses of the system, and advocated reducing cases of solitary confinement to a minimum. They maintained that isolation aggravated the state of the patient and made him hostile, whereas humane treatment under intelligent supervision and in comfortable rooms tended to improve his condition.

Part 2 of the book consists of letters and extracts, setting forth the opinions of contemporary psychiatrists on the subject of isolation and confinement. Opinions may be divided into three classes: the first maintains that the cell is rarely, but sometimes, indispensable; the second, that the cell ought to disappear, but only when circumstances permit; and the third class believes that, from this time on, the use of the cell ought to be thoroughly condemned.

Philistine and Genius. By BORIS SIDIS, M.A., PH.D., M.D. Third edition. Revised. Boston: Richard G. Badger. 1918.

"Philistine and Genius" is a critical commentary upon our modern educational system. In the preface on current events, Dr. Sidis denounces the present age as a reversion to savagery of the most degenerate type, a condition for which education is chiefly responsible. This work is a scathing indictment of the spirit of philistinism which consumes the wealth and science of the nation for commercial and even barbarous purposes. Dr. Sidis appeals to the fathers and mothers of the country to control the early education and social environment of their children, instead of leaving the task of moulding the minds of future generations to the philistine-educator. Deceiving children about life and man by myths and fairy tales is conducive to the development of mental abnormalities in later life. The book is a plea for truth, for the recognition of evil and life's realities. Parents should foster originality and independence of thought by awakening the child's critical spirit, and by imbuing him with a love of knowledge, truth, art and literature. The book condemns the methods of our schools and colleges for repressing genius and aiming at mediocrity. To develop genius one must avoid routine, cultivate variability and the power of habit-disintegration. Dr. Sidis appeals to American parenthood to rescue the children from the rampant spirit of philistinism which dominates our educational system, by fostering the latent genius which exists in every child.

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

EPIDEMIOLOGIC STUDIES OF POLIOMYELITIS IN NEW YORK CITY AND THE NORTHEASTERN UNITED STATES.

THE studies made by officers of the United States Public Health Service upon the epidemic of poliomyelitis which occurred during 1916 in New York City and the Northeastern United States have been reported in Public Health Bulletin No. 91. The work in this epidemic developed along two lines: One group was engaged in the supervision of interstate traffic in relation to the disease and the notification of local health authorities concerning the movements of persons from the epidemic area; the other group conducted scientific investigations of the disease. This report is concerned with the epidemiological and statistical aspects of the work of the latter group.

A review of the history of poliomyelitis prior to 1916 shows, as the outstanding feature of its epidemiology, a recent and rapid develop-

ment of epidemic prevalence. Since 1868, when the first clearly defined epidemic was recorded, the recognized epidemics of this disease have increased in number of cases from a score to several thousands, in territory involved from a single village to whole states. This evolution has been steadily progressive, every few years witnessing an epidemic surpassing all previous experience, and it has gone forward in many countries, perhaps throughout the world. It appears, however, to have originated in Sweden or Norway, and to have been most marked in these countries and the United States. Since 1909, the first year for which any general mortality and morbidity statistics are available, poliomyelitis has figured each year in the mortality records of every state in the United States having a registration population of 500,000 or more. Prior to 1916, the highest prevalence recorded in any whole state was about 87 cases per 100,000 in Vermont, in 1914. In no other state or other population group of 500,000 or more had the prevalence reached 50 per 100,000.

As compared with this prevalence in previous years, incomplete data for the year 1916 show approximately 29,000 cases, with 6,000 deaths reported in the United States, of which number 23,000 cases, with 5,000 deaths, occurred in the northeastern states, in distinct relation to the New York epidemic, in a population of about 32,000,000. In New York City, in 1916, the disease reached a prevalence of 185 per 100,000 in a population of 5,600,000; in New Jersey, 134 per 100,000 in nearly 3,000,000 population; in New York State, exclusive of New York City, 78 per 100,000 in 4,670,000.

In certain of its features the epidemic of 1916 conforms closely to previous experience, while in others it is distinctly remarkable. The features which may be considered most remarkable are an extent and intensity beyond all previous experience, an origin remarkably definite as to time and place, a strikingly uniform radial spread from this focus with intensity progressively decreasing in proportion to distance from the center, and in general, a demonstrable mathematical regularity in its whole evolution.

The epidemic had a peculiarly well defined origin, during the latter half of May, in a certain locality in the Borough of Brooklyn; and its whole subsequent development bears a distinctly traceable relation to this origin. As to

its essential cause, the special conditions which led to the development at this time and place of such an extraordinary epidemic, nothing is known. In New York City the epidemic had reached its maximum by the second week in August, thence declining to a vanishing point about November 1. By this time the number of cases in the city had reached 9,345, with 2,243 deaths, a case mortality of 24 per cent. As is usual, the disease was confined almost exclusively to the child population, 79.2 per cent. of the cases being in children under five, and approximately 98 per cent. in those under 15 years of age. The case mortality was lowest in the age group one to four years, and progressively higher in each successive higher age group.

Outside of New York City the epidemic extended over an area of approximately 300 miles radius, including the states of New York, New Jersey, Pennsylvania, Delaware, Maryland, Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, and Maine. Throughout this area the evolution of the epidemic was remarkably regular in that, with increasing distance from New York City, its development was progressively later and its total incidence in the population less, as demonstrated by comparison of successive concentric 50-mile zones. Comparison of rural with urban districts shows that in the rural districts a larger proportion of cases occurred in the higher age groups, suggesting a less general immunity of the older population than is found in metropolitan centers.

According to all available evidence, the extension of the epidemic was independent of such factors as mass infection of food, milk, or water supplies; racial origin and economic status of the population, and of the various environmental conditions systematically studied. Special studies of a possible relation between the spread of infection and the occurrence of some hypothetical epizootic among rats, cats, dogs, or other studies, were made, but were not, however, carried out on an extensive scale. In individual cases, contact, either direct or indirect, with a previous case of poliomyelitis could but rarely be established.

The following observations were made in this epidemic study:

1. That poliomyelitis is, in nature, exclusively a human infection, transmitted from person to person without the necessary interven-

tion of a lower animal or insect host, the precise mechanism of transmission and avenues of infection being undetermined.

2. That the infection is far more prevalent than is apparent from the incidence of clinically recognized cases, since a large majority of persons infected become "carriers" without clinical manifestations. It is probable that during an epidemic such as that in New York City, a very considerable proportion of the population become infected, adults as well as children.

3. That the most important agencies in disseminating the infection are the unrecognized carriers and, perhaps, mild abortive cases ordinarily escaping recognition. It is fairly certain that the frank, paralytic cases are a relatively minor factor in the spread of infection.

4. That an epidemic of one to three recognized cases per thousand, or even less, immunizes the general population to such an extent that the epidemic declines spontaneously, due to the exhaustion or thinning out of infected material. Apparently an epidemic incidence relatively small in comparison to that prevailing in an epidemic may produce a population immunity sufficient to limit definitely the incidence rate in a subsequent epidemic.

AN INFLUENZA BULLETIN.

At a time when the influenza epidemic is again presenting serious phases, the publication of an *Influenza Bulletin* by the American Public Health Association is particularly helpful. This pamphlet reviews the information available and suggests practical methods of prevention and relief. The micro-organism or virus primarily responsible for this disease, has not yet been identified and there is no known laboratory method by which an attack of influenza can be differentiated from an ordinary cold or bronchitis, or other inflammation of the mucous membranes of the nose, pharynx, or throat. Evidence seems conclusive, however, that the infective micro-organism, or virus, of influenza is given off from the nose and mouth of infected persons, and that it is taken in through the mouth or nose of the person who contracts the disease.

There are various means which may be adopted to prevent the spread of influenza. First of all, it is advisable to break the channels of communication by which the infective

agent passes from one person to another; this may be done by preventing droplet infection, by sputum control, and by supervision of food and drink. Rendering persons exposed to infection immune, or at least more resistant, by the use of vaccines, is a second method of prevention. The use of vaccines, however, has yielded contradictory and irreconcilable results. In view of the fact that the causative organism is unknown, there is no scientific basis for the use of any particular vaccine against the primary disease. A third preventive measure is to increase the natural resistance of persons exposed to the disease by augmented healthfulness. Physical and nervous exhaustion should be avoided by paying due regard to rest, exercise, physical and mental labor, and hours of sleep.

In order successfully to prevent the spread of infection, there must be an efficient organization to meet the emergency, providing for a centralized coördination and control of all resources. All facts regarding the epidemic should be secured by such methods as compulsory reporting and canvassing for cases. The public should be educated with respect to respiratory hygiene and warned of dangers which can be avoided. Laws against the use of common cups, and proper ventilation laws should be enforced. Non-essential gatherings should be prohibited; the wearing of masks should be made compulsory in hospitals and for all who are directly exposed to infection; patients suffering from influenza should be isolated.

Besides reviewing these preventive measures, this bulletin summarizes methods of relief and the facilities offered by field nursing, emergency medical service, and hospitals, and makes the following suggestions:

"In view of the probability of recurrences of the disease from time to time during the coming year, health departments are advised to be ready in advance with plans for prevention, which plans shall embody the framework of necessary measures and as much detail as is possible. Laws plainly necessary should be enacted and rules passed now. Emergency funds should be held in reserve or placed in special appropriations, which appropriations can be quickly made available for influenza prevention work.

"The probability that as an after effect of the influenza epidemic there will be an unusually high pneumonia rate for several years should be taken into consideration.

"Of measures for the control of the disease,

baacteriologic studies as to the nature of the organisms causing the primary infection and as to bacteria associations, new and improved procedures leading to the production and use of effective vaccines and curative sera, and the fresh air treatment of the infected, appear to offer most promise."

THE BOSTON METROPOLITAN CHAPTER OF THE AMERICAN RED CROSS.

THE annual report of the Boston Metropolitan Chapter of the American Red Cross for the year ending in June, 1918, includes a general account of the activities and scope of the work of the organization. The activities may be grouped under three general heads: Administration, Relief Activities, and Development.

The Administration Department is divided into four divisions: shipping, purchasing, information, and finance. From December 5, 1917, to the end of the fiscal year, the shipping department shipped 1383 standard boxes. The purchasing department has procured all raw material and supplies—including cloth, gauze, yarn, stationery, and office supplies. The information department, besides answering various questions asked by all kinds of people, has conducted correspondence between civilians of this country and enemy countries. The finance department has received \$155,596.25 from membership fees during the year; as this sum more than covers all administrative expenses, it has been possible to devote the entire amount contributed to the War Funds directly to the purpose for which it was contributed. The amount received by the Boston Metropolitan Chapter from the First War Fund was \$504,033.00; from the Second War Fund, \$250,000.00.

The Department of Relief Activities includes the Education Department, which has offered classes of instruction in first aid, home nursing, surgical dressings, and conversational French; the Volunteer Motor Service, which has given Hospital service, civilian relief, ambulance service, and aid in case of civil disaster; the Naval and Military Relief, which has been responsible for surgical dressings, canteen work, comfort kits, and base hospital service. The Department of Civilian Relief, responsible for covering disaster relief and home service, rendered valiant service at the time of the Halifax disaster.

The Development Department has conducted membership campaigns, supplied speakers for the Red Cross meetings, organized branches and auxiliaries of the Chapter, managed the Publicity Department, secured coöperation between various organizations, and has conducted benefits and entertainments.

The work of the Boston Metropolitan Chapter of the American Red Cross has been accomplished by the coöperation and unselfish service of thousands of people of all classes who have desired to serve a great and common cause.

MEDICAL NOTES.

MEDICAL CORPS ASSIGNMENTS.—Captain Edgar W. West and Lieutenants Clyde W. Rice and S. B. Buck, of the Medical Corps, have been assigned to duty with the Narragansett Bay coast defenses. Lieutenant Harry N. Golden, also of the Medical Corps, has been sent to Fort Adams.

VITAL STATISTICS IN BERLIN.—The vital statistics of Berlin, the publication of which heretofore has been prohibited, are now available. They disclose the almost catastrophic effect of the war's privations on the people of Berlin.

The excess of births over deaths in 1913 was 12,766. In 1916 there was an excess of deaths over births of 4440 and there were 15,397 more deaths than births in 1917. These figures do not include the soldiers who died at the front or in hospitals. The total number of deaths in 1917 was 7000 more than the previous year, despite the fact that Berlin's population had decreased 70,000.

PROMOTION OF NORTHAMPTON PHYSICIAN.—Dr. Elmer E. Thomas, who has been serving for more than a year as an American surgeon with the English Expeditionary Forces on the Flanders front, has been promoted from the rank of first lieutenant to captain. Dr. Thomas went to Great Britain to serve in the United States armies, but so great was the English need of medical men that he was assigned for service with a Royal Liverpool regiment and was in all the hard campaigning in the Ypres and Flanders sectors.

FRENCH WOUNDED FUND \$453,803.—Kidder, Peabody & Co., treasurers of the American

Fund for French Wounded, announce that the total subscriptions to date amount to \$453,803.09.

WORK OF THE ROCKEFELLER FOUNDATION.—Dr. George E. Vincent, president of the Rockefeller Foundation, has announced that the organization, after diverting its activities for four years to war relief and army welfare work, in which it expended \$21,000,000, will immediately resume its work of attempting to eliminate disease in all parts of the world.

Major-General William C. Gorgas, until recently Surgeon-General of the United States army, will soon head an expedition of scientists to Central and South America to conquer yellow fever. He will be accompanied by five experts, and believes that by battling the disease at its source in these countries it can be exterminated in a few years. The organization will also begin a campaign to wipe out the plague in China and other countries of Asia.

The Medical University of Pekin, China, being erected by the Rockefeller Foundation at a cost of \$6,000,000, will be opened not later than October, 1920. Another medical university will be built by the organization at Shanghai, China.

NURSES NEEDED IN PORTLAND.—The new outbreak of influenza in Portland, Maine, has become so serious that urgent calls have been sent out by the Red Cross for both professional nurses and those who have had only some training in home nursing.

In Auburn, Maine, there are over 200 cases of influenza and the schools have closed.

INFLUENZA AMONG MONTANA INDIANS.—It has been reported that hundreds of Indians on reservations in Montana have died from influenza. Many deaths were caused by drastic methods which some tribes used to combat the disease. Influenza patients, it is claimed, took hot water or vapor baths and then leaped into cold mountain streams.

ESTIMATE OF DEATHS FROM INFLUENZA.—There seem to be reasonable grounds to believe that 6,000,000 persons have died of influenza and of pneumonia in the past twelve weeks. This plague, therefore, is five times more deadly than the war, which it is estimated killed 20,000,000 persons in four and a half years.

Influenza has cost London 10,000 lives to date. Never since the Black Death has such a plague swept the world. In India alone it is estimated there were 3,000,000 deaths. In Bombay there were 15,000 and in Delhi 800 daily. The Punjab lost a quarter of a million. In Capetown 2000 children were made destitute.

Eighty per cent. of the natives of Samoa were infected. In Spain the visitation was terrible. Barcelona having 1200 deaths daily.

No medical authority is certain of any conclusion yet reached, but possibly a still undiscovered organism is involved. Possibly the increased virulence of the influenza bacillus is responsible. It was mild when it first started in Spain. It visited England in a mild form, then America, then returned to England in a severer type. Usually it first appeared at sea ports. The figures indicate the infection was by contact and not carried through the air.

CHANGES IN PRICES OF DRUGS AND CHEMICALS. Many price changes have occurred in drugs and chemicals, but very few are important. Glycerin is weak and lower. Mercury declined \$2 per flask. Chloral hydrate crystals have been reduced by makers. Courmarin and menthol quotations are lower. Larger imports of cinchona bark caused the market to weaken, and holders of cascara sagrada made offerings freely at concessions. Botanicals are firm. Gingers and mustard seed are tending upward.

ANTI-TUBERCULOSIS FACILITIES IN ILLINOIS.—Three years ago the State of Illinois had only one tuberculosis sanatorium. At the present time, forty such institutions either exist or are provided for. By the November State election of 1918, it was voted to provide county sanatoria and visiting nurse service for thirty-three counties.

THE FRAMINGHAM DEMONSTRATION.—In the December Bulletin of the National Tuberculosis Association, the following conclusions to be drawn from the Framingham Health Demonstration activities in reference to tuberculosis are summarized:

1. Tuberculosis exists to a larger extent in the average industrial community than had previously been supposed. This is borne out by the fact that in Framingham, during the year previous to the Demonstration, the ratio of known cases to deaths was 3 to 1, while in 1917, the first year

of the Demonstration, this ratio was 11 to 1. Further, on a basis of the examination drives the indications are that there exists in the community 21 cases to every death, including arrested cases. When the ratio is restricted to include only active cases the figure is 9 or 10 to 1.

2. Tuberculosis can be found if looked for. The people will take advantage of free, expert, medical examinations. During 1916 there were 40 known cases of tuberculosis in Framingham. The total number of cases under care in 1917 was 185. The total number of cases, including deaths, under observation and treatment from January 1, 1917, to November 1, 1918, was 295, including a number of cases being followed as still in the suspicious class.

3. Concentrated tuberculosis work will stimulate the reporting of cases. During the decade 1906 to 1916 the physicians of Framingham reported the annual average number of 13 cases. During 1917 the cases reported numbered 59.

4. The physicians are quick to take advantage of an expert consultation service. To date through the consultation service 53 cases have been discovered and placed under care.

5. At present about 10% of the known living cases are receiving treatment in institutions out of town; consequently the great majority of cases are under home observation. 50% of the total number of living cases under care at the present time (239) are arrested.

6. An investigation of the reliability of death certification by physicians in tuberculosis cases for the preceding decade showed that the stated mortality rate should be increased by approximately 22%, accounted for largely by transfers from incorrect certifications of tuberculosis cases, as pneumonia, bronchitis, etc. With these corrections the decade mortality rate was 121.5 per 100,000. For 1917 the rate was 99.

7. A certain number of cases (28 to date) constantly leave town to take treatment in other parts of the state or country. Many of these are benefited by the advice received and by the medical diagnostic work before leaving Framingham.

8. In view of the large number of arrested cases and slowly progressing advanced cases which an extensive campaign discovers, it has been necessary to devise a somewhat modified system of classification, recognizing in a more direct way the economic and social adjustments

which the working patient under nursing observation has to make. The headings in this classification are as follows:

Early

Incipient, early, moderately advanced

Advanced

Rapid, slow, stationary.

Convalescent

Arrested

Early, advanced

Cured

Lost

Dead

This chart, with the use of pins, is a functional chart, allowing for the shifting of individual cases from column to column as progress is indicated by frequent reexaminations.

9. The findings in Framingham as to racial factors bear out previous experience elsewhere namely, that the Italian race stock presents a low tuberculosis incidence, in contrast to high rates in French-Canadians, Irish and other race stocks. On the other hand the Von Pirquet skin reaction among children shows a high percentage of infection among Italian children, with a correspondingly low incidence of active disease.

10. The work thus far in Framingham has been largely diagnostic with emphasis on the discovery of cases and their proper classification. It is believed that the great majority of active cases has now been discovered. From now on efforts will be concentrated on treatment and follow-up, including nursing visits, x-ray examinations, reexaminations, etc. Incidentally, the knowledge of a large number of arrested as well as active tuberculosis cases, together with the fairly complete reporting of influenza cases in the recent epidemic, makes possible an interesting and promising study of the relationship of this acute respiratory disease to tuberculosis.

THE RED CROSS CHRISTMAS ROLL CALL AND THE NATIONAL TUBERCULOSIS ASSOCIATION.—

This year the Red Cross and the National Tuberculosis Association will cooperate in making the Christmas Roll Call for membership a success, and a part of the funds secured will be available for anti-tuberculosis work. Anti-tuberculosis workers may help in two ways: by working in the campaign and by becoming actual members. In the December issue of the National Tuberculosis Association *Bulletin*, the suggestions which have been sent to the anti-tuberculosis societies in the Atlantic Division

of the American Red Cross show how members of those societies can be of service. By cooperating with district chairmen of Red Cross chapters, by securing volunteer service of persons, groups, or organizations, by assisting in local publicity work by means of advertising and speaking, and by keeping the subject of tuberculosis before public attention at this time, it will be possible for anti-tuberculosis workers to aid in the campaign.

EXAMINATION OF 10,000 RECRUITS WITH DOUBTFUL HEART CONDITIONS.—In February, 1916, by desire of the War Office, the honorary medical staff of the National Hospital for Diseases of the Heart undertook to act as expert referees on all cases of doubtful cardiac conditions referred to them by the various recruiting boards of the metropolitan area.

In every case an exhaustive medical history was taken, inquiry was made into subjective symptoms complained of, and the ordinary clinical examination by inspection, palpation, percussion, and auscultation was undertaken. In addition to this the urine of every recruit was examined, the pulse, blood pressure, and the respiration was taken in the recumbent position before and immediately after a standardized piece of exercise, and again after three minutes' rest in the recumbent position. Each case was electro-cardiographed, and the heart was examined by means of the x-rays. As the result of these various methods of examination a diagnosis was arrived at, and the medical boards were advised as to the category for service for which, in the opinion of the examining physician, the recruit was fitted, the responsibility for the actual classification adopted necessarily resting with the medical board.

Up to January 14, 1918, 10,000 different recruits were examined, as well as 181 men already in the army, who were referred for opinion by army medical officers. As the result of this work, a large number of records have been accumulated, and it is felt that the material thus obtained, if carefully analyzed, may assist in elucidating certain problems connected with affections of the heart.

DISCUSSION OF INFLUENZA AT CHICAGO MEETING.—At a recent meeting in Chicago of a committee appointed by the American Public Health Association, measures to be taken to stop the spread of influenza were discussed. No definite

conclusions concerning the cause and methods of fighting the disease were adopted. It was recommended, however, that non-essential gatherings should be prohibited and that the closing of schools should be left with local authorities.

The committee reported that the micro-organism, or virus, primarily responsible for this disease had not yet been identified, but that deaths resulting from influenza commonly are due to the development of pneumonia. It was stated that evidence as to the success of vaccines was contradictory and irreconcilable, as also was the evidence regarding the beneficial results from the use of masks. The report recommended the compulsory wearing of masks in hospitals and by barbers and dentists.

As methods of prevention the committee recommended "breaking the channels of communication by which the infective agent passes from one person to another, rendering persons exposed to infection immune or at least more resistant, by the use of vaccines, and by augmented healthfulness."

The report was signed by Dr. W. A. Evans, Chicago; Dr. D. B. Armstrong, Framingham, Mass., and Dr. W. C. Woodward, many years in Washington, D. C., but now of Boston.

SURGEON GENERAL BLUE AGAIN ISSUES WARNING.—Surgeon General Blue has again emphasized the danger of relaxing efforts to check the spread of influenza. He is reported to have said:

"The epidemic is not ended, and such recurrences of cases and deaths as are now occurring in many localities may be expected to become more or less general. Any statement at the present time that the epidemic has come and gone for good can only do harm, for it will lull people into a false sense of security, and cause them to relax precautions."

ARTHROMETRY, OR THE MEASUREMENT OF THE MOVEMENTS OF THE JOINTS.—In restoring men who have been disabled in the war, the importance of accurate measurement of joint movement is becoming recognized. There has been published recently a pamphlet describing the measurement of the movement of the joints, by W. Wilbraham Falconer. Mr. Falconer has studied the problem of determining the mobility of the limb, and offers to those especially who are employing physical remedies for disabled men a description of his device for measuring

the arthrometer. The measurement instruments at present employed are defective in that they are costly, the measurements they record are not strictly accurate, the process of working them is slow, and specially instructed measures are needed. Mr. Falconer's apparatus is extremely simple and can record the movement of all the principal joints in the body. This pamphlet includes instructions for the use of the arthrometer and arthrometrical charts.

PUBLIC HEALTH SERVICE RESERVE FORCE.—It is reported in a recent issue of *Science* that a permanent reserve force upon which the Public Health Service can draw in time of emergency such as that presented by the influenza epidemic has been authorized by the Congress. This consists of officers, none holding rank above that of assistant surgeon general, commissioned by the president for a period of five years, subject to call to active duty by the Surgeon General, U. S. P. H. S.

When in such active duty they receive the same pay and allowances as are now provided by law for the regular commissioned medical officers in the service. By far the larger part of the reserve to be organized under this act will be on active duty only during times of national emergency, though it will probably be necessary to establish periodic terms of training, so as to better fit the officers for such service. With the passing of the emergency these men will automatically go on the inactive list; always, however, subject to call to active duty by the surgeon-general. Detailed plans for the organization, training and assignment of the reserve officers are now under consideration.

COMMITTEE FOR REHABILITATION OF DISABLED SOLDIERS.—In a recent issue of *Science* it is reported that a permanent committee, comprising representatives of all the allied governments, has been appointed to centralize matters connected with the rehabilitation of disabled soldiers. The committee includes: Dr. Bourrillon (France), who serves as president of the committee; Dr. Mélis (Belgium), Sir Charles Nicholson (Great Britain), General Bradley (United States), L. March (France), Dr. Da Costa Ferreira (Portugal), and Agathonovitch (Serbia) as vice-presidents. All these hold high military rank. An institute for research has been founded at the headquarters of the committee which is already installed at 102 rue de Bac.

Paris. A review is to be issued by the committee. The editor in chief is Dr. Jean Camus, of the Paris Medical School, with Dr. Bourrilhon, the president of the committee, and Mr. C. Krug, the secretary general, as the board of directors for the publication. The work of the committee is to include the promulgation of the general principles for rehabilitation of the disabled, which each country can adapt to its own laws and customs; to group and centralize the data and the lessons learned from experience, and to apply them and aid in every way the mutilated and to extend this aid into the future after the war. By this coördination of efforts each one of the allied peoples will be able to profit by the improvements and achievements realized in any one of them.

INFLUENZA SITUATION IN LONDON.—The medical correspondent of the London *Times* has written the following article on the spread of influenza:

"A deal of nonsense has been written and spoken about the nature of the influenza condition. It may be admitted no certain conclusion has been reached. The influenza bacillus has been found with great regularity. In cases where empyema followed pneumonia, pure cultures of pneumococcus have been obtained. Some doubt exists still as to whether a new organism may not be implicated.

"It is not necessary to assume a new organism has been present to account for the great virulence of the epidemic. Bacteriologists long have known that epidemics vary greatly in severity and that their passage from post to post may augment the lethal power of the germ until such a degree of deadliness has been reached that death occurs within a few hours after infection, and before ordinary symptoms of disease—which largely are of the nature of a reaction—have time to develop.

"Many of these pneumonia cases had no pneumonia symptoms in the ordinary sense. That is to say, there was no consolidation of the lung. Infection was too severe, it spread beyond the lung to the blood itself, seeming to paralyze the normal methods of defence.

"When we come to the geographical course of the epidemic we find what seems like a confirmation of this view of augmented virulence. The epidemic began in Spain last summer. It was then mild with comparatively few deaths. In that form it spread through Europe, visiting

London in June. It was treated by the public as a joke, the victims soon recovering. The epidemic then reached America and in August and September we began to hear disquieting accounts. During these months it practically disappeared in London, but October saw the beginning of the return journey and the beginning of the present plague. As must be expected, the ports were involved first, Glasgow and Liverpool in particular suffering heavily a considerable time before other centers were affected. Next the disease reached London, to which, no doubt, it was brought by travelers on through trains. From London it radiated again, visiting Birmingham, Nottingham and other centers. It still is raging with full fury in the smaller country districts, which have now become involved."

The *Times* points out, also, that throughout the world about 6,000,000 persons have perished from influenza and pneumonia during the past six months. It has been estimated that the war caused the deaths of 20,000,000 persons in four and a half years. Thus influenza has proved itself five times more deadly than war, because in the same period, at its epidemic rate, influenza would have killed 100,000,000.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Dec. 21, 1918, the number of deaths reported was 334, against 235 last year, with a rate of 22.20, against 15.86 last year. There were 38 deaths under one year of age, against 34 last year.

The number of cases of principal reportable diseases were: diphtheria, 49; scarlet fever, 31; measles, 10; whooping cough, 13; typhoid fever, 2; tuberculosis, 55.

Included in the above, were the following cases of non-residents: diphtheria, 8; scarlet fever, 1; tuberculosis, 3.

Total deaths from these diseases were: diphtheria, 7; whooping cough, 2; typhoid fever, 1; tuberculosis, 21.

Included in the above, were the following non-residents: diphtheria, 1; tuberculosis, 1.

COMFORT FUND NEARLY EXHAUSTED.—The Convalescent Comfort Fund has distributed tobacco, cigarettes, chocolate, candy and fruit to the returning wounded soldiers of the following transports: Finland, Antigone, Pocahontas.

Acolus, Kroonland, Madawaska, Powhatan, Pastores, Princess Matoika, Mercury, Susquehanna, Huron, K. der Nederlanden, Rijndam, Martha Washington, Zeelandia and Tenadores. The fund is nearly exhausted, and additional contributions will be gratefully received.

MEDICAL COMMITTEE NEEDS MORE FUNDS.—The committee which has charge of the medical social work that is being done quietly but efficiently at the Boston City Hospital, is making an appeal for additional public support to that which has been given by an enthusiastic and philanthropic group of women during the past four years. In order to have a sufficiently large corps of workers to meet the fresh demand that is being made and to continue the follow-up work caused by the recent influenza epidemic, more money is needed.

Two of the important phases of the work done by this organization are helping the patients who are waiting to be discharged and the follow-up work so that the good already accomplished by the doctors and nurses may not be lost. This latter sometimes includes the furnishing of suitable clothing with which to leave the hospital, the furnishing of persons to accompany patients to their homes, or the providing of suitable conveyances, the rehabilitation of families stricken by an epidemic, proper care for recently orphaned children, the chronic care for mentally deranged persons.

More than 2000 persons have been cared for in these and in many other ways by this department during the past year, and during the past few months 250 sick and wounded soldiers have been in the City Hospital and many of them have been cared for by this department.

Donations for this work may be sent to the Old Colony Trust Company, for the medical-social work at the City Hospital, or to William C. Endicott, 71 Ames Building, Boston.

GENERAL HOSPITAL NUMBER 10.—Wounded soldiers from overseas are not expected at General Hospital Number 10 until after Christmas. At present, there are about twenty patients in the hospital. Of these, only two are men who have seen service in France and they were transferred to Boston from the hospital at Norfolk, to be treated for injuries accidentally received there. Because of a lack of help, preparations for the reception of a large number of patients has not been completed.

Apparatus is now being installed in the Robert

Brigham Hospital for use in the reconstruction work which will be done there. When this work is in progress, there will be facilities for teaching printing, carpentry, typewriting, and other occupations. The man whose injury prevents his return to the occupation which he followed before the war will be fitted for another if possible.

The general hospital will have a capacity of 650 patients as a minimum. More than that number may be accommodated in case of need. While the Metropolitan Chapter of the Red Cross has offered to transfer wounded men from the wharves or railroad stations to the hospital and the Army authorities will gladly use the Red Cross facilities if necessary, it is understood the hospital will be provided with a sufficient number of ambulances to handle all the cases likely to be received at one time.

INFLUENZA AMONG ARMY MEN.—Several cases of gripe have been reported to Northeastern Department army officers of men who are here on furlough from other points. Four men have been sent to hospitals.

At Camp Devens there are only 21 cases of influenza among the 30,000 troops in the camp.

On December 18, there were only three cases among army men reported.

On December 20, only one new case of influenza was reported in the army.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE—Annual conference to be held at Lorimer Hall (Tremont Temple), Boston, Thursday, Jan. 16, 1919.

Afternoon session, 3 P.M. General subject: Mental Hygiene, War and Education.

1. "The Need and Opportunity for Mental Hygiene as Shown by the War."

Speaker: Major Frankwood E. Williams, Medical Corps, U.S.A.

2. "The Need for Instruction in Mental Hygiene in Medical, Law, and Divinity Schools."

Speaker: H. Douglas Singer, M.D., State Alienist and Director of the Illinois State Psychopathic Institute.

3. "War Camp Community Service and Morale." Joseph Lee, President War Camp Community Service.

Evening session, 8 P.M. General subject: Mental Hygiene and the Education of the Young.

1. "Methods of Developing Mental Hygiene in the Public School." Arnold Gesell, Ph.D., Professor of Education, Yale University.

2. "Facts of Mental Hygiene that Teachers Ought to Know." Walter F. Dearborn, M.D., Professor of Education, Harvard University.

3. "Nervous Children and Their Training." C. MacFie Campbell, Professor of Psychiatry, Johns Hopkins University.

WARNING ISSUED BY CITY HEALTH COMMISSIONER.—The Boston Health Commissioner, Dr. William C. Woodward, has issued the following warning in the hope of checking somewhat the influenza-pneumonia contagion:

"Coughing, sneezing and even forcible talking are still looked upon as the most potent agencies through which influenza is spread. Coughing, sneezing and forcible talking in crowds whether indoors or out, unless safeguarded by the use of the handkerchief or other protective covering, must be looked upon as little more than assaults upon the assembled persons generally.

"Covering the mouth and nose with the handkerchief when coughing and sneezing tends to protect the public, but there is always danger that the cough or the sneeze will have occurred before the handkerchief is in place, or that mild coughs and sneezes will be disregarded.

"A forcible talker, however, is hardly in a position to protect his mouth during talking by the use of any protective covering.

"Holding one's hand before one's mouth or nose during talking, sneezing or coughing, may tend to limit the spread of infection by means of droplets, but it tends also to soil the hands, and thus tends to convey the infection to the next persons whose hands are taken.

"The moral is that coughers, sneezers and forcible talkers, especially if they have colds, are dangerous at best and should be excluded from crowded places rather than be left to protect by their own skill and agility in getting handkerchiefs or cloths before their faces before the cough or the sneeze takes place.

"The Health Department has prepared placards requesting coughers and sneezers to remain away from places of assembly and will display them as widely as possible throughout the city. Persons desiring such cards or placards for use about their own establishments will be furnished with them upon request."

INFLUENZA REPORTS.—New cases of influenza have increased the mortality in certain parts of the state, but the present outbreak is only about one-seventh as severe as the epidemic a few weeks ago, and health officials do not fear that another serious situation will develop.

The whole number of cases of influenza reported to the State Health Department for the week ending December 14 was 7802, and the deaths aggregated 99. The report for a twenty

four hour period ending on December 14 shows 1203 cases and 14 deaths.

In Boston there were reported 60 new cases on December 15, 183 on December 16, with 12 deaths for each day. There was a decrease in cases of lobar pneumonia; 9 cases and 5 deaths were reported on December 15, and 4 cases, and 13 deaths on December 16. The highest point in new cases and deaths from influenza since the recurrence of the epidemic in Boston was reached on December 17, when 94 new cases (86 of influenza and 8 of pneumonia) and 21 deaths (10 of influenza and 11 of pneumonia) were reported.

Various local reports include the following number of cases: New Bedford, 70; Plymouth, 89 for 5 days; Taunton, 14; Brookline, 26; Easton, 20; Quincy, 29; Rockland, 24; Gloucester, 23; Haverhill, 47; Lynn, 57; Malden, 32; Belmont, 20; Lexington, 13; Waltham, 39; Winchester, 24; Framingham, 91 for several days; Natick, 24; Needham, 26; Worcester, 16; Boylston, 16; Fitchburg, 88; Gardner, 10; Conway, 30; Northampton, 23; Springfield, 118; Westfield, 25; Falmouth, 32; Brockton, 40; Cambridge, 57; Everett, 17; Newbury, 14 in 2 days; Lawrence, 17; Methuen, 23; Somerville, 21; Milford, 32 in 2 days; Newton, 27; Southbridge, 18; Holden, 36 in 9 days; Leominster, 19 in 3 days; Easthampton, 33 in 2 days; Montague, 11 in 2 days; Pittsfield, 6; Fall River, 36; Milton, 38; Beverly, 23 for 2 days; Arlington, 15; Attleboro, 300 in 2 days.

On December 18, there were reported 2,105 new cases of influenza and pneumonia and 51 deaths in Massachusetts.

In Boston, for the twenty-four hours preceding 9 o'clock on the morning of December 18, 147 new cases of influenza and 19 cases of lobar pneumonia were reported, with a total of 12 deaths, 6 from each disease. Health Commissioner Woodward stated that he could only advise again the observance of simple health rules as the best means against infection. These are avoidance of overexertion, and taking plenty of sleep and fresh air and exercise.

The following reports were sent to the Department of Health on December 18, from various towns and cities:

Barnstable, 46; Fall River, 78; New Bedford, 74; Plymouth, 45 in 6 days; Brockton, 74; Brookline, 63; Cambridge, 31; Rockland, 68; Everett, 22; Gloucester, 16; Haverhill, 27; Malden, 60; Concord, 50 in 8

days; Lawrence, 22; Lexington, 23; Lowell, 27; Methuen, 28 in 2 days; Somerville, 23; Waltham, 107; Woburn, 33; Charlton, 26; Framingham, 40 in 3 days; Milford, 12; Natick, 21, and 2 deaths; Newton, 25; Southbridge, 18; Worcester, 93; Fitchburg, 6; Templeton, 31; Northampton, 29, and 5 deaths in two days; Westfield, 18; Pittsfield, 10; Lynn, 96; Springfield, 218, and 8 deaths; Hatfield, 225 since October 24; Chatham, 125 since November 26; Andover, 82 for 5 days; Adams, 26 for 7 days; Falmouth, 49; Middleboro, 12; Provincetown, 28; Braintree, 82 in 4 days; Bridgewater, 22; Brockton, 77; Easton, 18; Hanover, 15; Quincy, 18; Salem, 19; Newton, 79; Charlton, 24; Worcester, 36; Leominster, 22; Townsend, 28; Monson, 34; Greenfield, 23.

A slight recurrence of the influenza epidemic has apparently developed in Quincy, Rockland, and Attleboro, but the reappearance of the disease is considered by medical officials as no more than the wake of a big wave which, broadly speaking, passed all over Massachusetts. In Quincy, 70 cases are reported. In Holbrook, the Sumner high school has been closed. There have been 60 cases in the school and 150 cases in the town, and in some of these pneumonia has developed. 250 cases have been reported from Abington and 500 from Whitman. Schools have been closed in Attleboro, and 25 new cases have been reported.

In Gloucester, the public schools will remain closed until after the Christmas vacation. 31 cases have recently developed, but there have been only 2 deaths, indicating that the situation is much less serious than in last September and October.

The public schools in Marblehead were closed on December 19 because of the illness of many of the teachers and pupils. They will be reopened on December 30. Only a few cases of influenza have been reported, but colds are prevalent.

On December 19, the State Department of Health recorded for a twenty-four hour period 1912 new cases of influenza and 31 deaths. Reports from various cities and towns show that Springfield had 61 cases and 11 deaths; Fall River, 29; Falmouth, 46; Taunton, 11; Brockton, 41; Brookline, 29; Cambridge, 64; Hanover, 21 in 2 days; Rockland, 20; Chelsea, 24 in 2 days; Everett, 22; Haverhill, 34; Lynn, 35; Malden, 33; Melrose, 28; Merrimac, 23; Peabody, 20 in 2 days; Lawrence, 12; Lexington, 23; Lowell, 12; Somerville, 21; Waltham, 102; Newton, 71;

Worcester, 49; Fitchburg, 33; Leominster, 52 in 2 days; Holyoke, 122 in 2 days; Westfield, 22.

On December 19, the health report for Boston and the vicinity showed an increase in the number of cases of influenza and pneumonia. There were 168 new cases and 15 deaths from influenza and 10 new cases of lobar pneumonia and five deaths from this cause.

Reports of influenza cases received on December 20 show the following figures: Brookline, 63; Cambridge, 31; Malden, 60; Somerville, 23; Waltham, 107; Woburn, 23; Newton, 25; Lynn, 96; Barnstable, 46; Fall River, 78; New Bedford, 74 cases and 5 deaths; Plymouth, 45 cases in 6 days; Brockton, 74; Rockland, 68; Gloucester, 16; Haverhill, 21; Concord, 50 in 8 days; Lawrence, 22; Lexington, 23; Lowell, 27; Methuen, 28 in 2 days; Charlton, 26; Framingham, 40 in three days; Milford, 12; Natick, 21 cases and 2 deaths; Southbridge, 18; Worcester, 93; Fitchburg, 6; Templeton, 31; Northampton, 29 cases and 5 deaths in 2 days; Westfield, 18 cases; Pittsfield, 10.

INFLUENZA IN SPRINGFIELD.—In the state as a whole, Springfield continues to be the heaviest sufferer, reporting 218 new cases and 8 deaths with 24 hours. With about 70 of the local physicians now in United States service in this country or abroad, the calls made upon those remaining have been so severe that the board of health sent a request yesterday to the war department, that a part of them be released to meet home needs.

STATE AND CITY COÖPERATE IN COMBATING INFLUENZA.—With 1912 new cases of influenza and 31 deaths reported in Massachusetts in 24 hours, Boston having an increase in mortality and cases, Gov. McCall and Mayor Peters yesterday recalled their emergency health committees, appointed during the earlier epidemic and asked them to consider whether a renewal of the precautionary measures taken to combat the original outbreak would be necessary.

Mayor Peters's committee voted to send out a call for nurses' aids, asking candidates to register with the Instructive District Nursing Association, 561 Massachusetts avenue.

Healthy, intelligent women, able to carry out the plain instructions of physicians and willing to assist in ordinary care of households are wanted to serve in families unable to pay.

City Health Commissioner Woodward declares that death certificates filed show that many

cases of influenza are not being reported by physicians as required by law.

The mayor's committee voted to concentrate influenza cases, so far as possible, in a single hospital. In case this plan fails, it will be necessary to appeal to hospitals generally to limit their other cases to those in acute need of hospital care and prepare to receive influenza cases. The committee recognizes the prevailing preference for home treatment, but emphasizes the need for increased care in such cases, and is prepared to placard houses with influenza cases in which instructions for the protection of others are disregarded.

Commissioner Woodward emphasizes the importance of people sleeping alone as a precaution, particularly when there are symptoms of a cold, and recommends that every doubtful case be regarded as influenza. He advises the avoidance of crowds and crowded conveyances, recommends walking to work whenever possible and urges that people do their shopping during the less crowded hours.

Both the Governor and the Mayor agree that all reasonable steps should be taken without delay, even at the expense of limiting Christmas programs. In Boston the question of closing theatres, churches and schools will be for the emergency committee to decide.

The use of masks by persons in attendance on influenza cases, and the frequent washing of the hands, are again urged on the public. Circulars instructing the public about taking precautions are being sent out.

The new cases of the malady in Boston during the present week have averaged more than 150 a day.

Physicians as a rule do not believe that the situation will offer the health problem that the earlier epidemic did, as the majority of the cases are less virulent. As persons more than 40 years of age are less susceptible than younger persons nurses past 40 years old are desired in preference to younger ones. The thorough cleansing of hands and eating utensils is considered of the greatest importance, also the isolation of suspects, and of people with colds remaining at home.

Members of the state emergency committee are requested by the Governor to report to Dr. Eugene R. Kelley, state commissioner, and Surg.-Gen. William C. Brooks, who will discuss with them methods of combating the new outbreak.

EMERGENCY HEALTH COMMITTEE WILL NOT BE REASSEMBLED.—After a conference on December 20 with Dr. Eugene R. Kelley, State Commissioner of Health, Governor McCall announced that there would be no reassembling of the Emergency Health Committee, and expressed his confidence that the State Health Department is capable of meeting the situation caused by the reappearance of influenza. On December 19 the Governor issued a call for a meeting of the Emergency Health Committee created under the Public Safety Committee when the grip epidemic was prevalent, to take such steps as might be necessary to prevent a virulent recurrence of the disease.

The State Health Department has kept its organization intact during the time since the disease was most severe. It has kept in touch with the War Department constantly and secured the release of doctors as fast as possible in order that they may be available in this state. It has kept its organization of nurses complete and in a state of thorough, efficient organization. Accordingly, the Governor feels that further organization is not necessary, and the statement is given out from the executive department that nothing will be done in the way of additional committee work.

Dr. John S. Hitchcock, director of the Division of Communicable Diseases, reports that there is still need for nurses, but not for doctors. The present outbreak of influenza, while serious, has not presented the cause for alarm which was justified by the previous epidemic. Serious cases are reported, but it is also true that hundreds of cases are reported as influenza which are not influenza.

Dr. Hitchcock says that the Department has no information regarding the new vaccine used in the Navy Department. The Department has sent a circular to the local board of health, saying that local outbreaks of lessened virulence may be expected for some time and urging them to keep in touch with the local relief committee.

NEW ENGLAND NOTE.

INFLUENZA IN PORTLAND, MAINE.—On December 18 and December 19, 142 new cases of influenza were reported in Portland, Me. As a preventive measure toward keeping the fortifications in the Portland Coast Artillery free of the disease, orders have been issued to keep the soldiers within the limits of their posts. None of the 2,000 men on duty there have the disease.

Miscellany.

WORK OF THE MASSACHUSETTS ASSOCIATED CHARITIES.

The review of the year's work of the Associated Charities of Massachusetts summarizes the unusual demands during the winter's severe weather, the coal shortage, the coöperation with the Red Cross, the measures taken during the influenza epidemic, legislative interests, and sources of help to the society. The society has no general relief fund, but the secretaries frequently secure money for individual families. Last year this sum reached \$55,943, and came in some instances from employers or relatives or churches; in others from various funds or relief societies, or from public-spirited citizens interested in individual need. Of this amount \$30,674 was spent in regular allowances for persons too old or too ill to assume their own support. The rest provided for special medical care or nourishment following illness, for vacations to tired mothers, education for promising boys and girls, or it helped to tide some families over emergencies. All this is apart from the regular expense for service to beneficiaries.

The society used its influence in urging the passage of the bill which makes it possible to erect the third school for feeble-minded at Belchertown. Its interest in the bills providing for the extension of continuation schools in the cities and towns of Massachusetts and physical education for school children led to the special study of 151 children in industry who were between the ages of 16 and 14.

One hundred more volunteers are needed as friendly visitors in service to families, of whom there were 3,417 enrolled last year. At least \$54,000 is needed in contributions to pay for service to them and to the community.

MASSACHUSETTS HOSPITALS FOR CONSUMPTIVES.

The eleventh annual report of the Massachusetts Hospitals for Consumptives is a record of the excellent work which has been accomplished in this State during 1917. Three hundred ninety-three thousand, four hundred and forty-two days of treatment were provided for 1,789 patients. In order to facilitate the control of tuberculosis in the State, arrangements have been made for the construction of new county

tuberculosis hospitals. This plan will make it possible to reserve the Rutland, North Reading, Lakeville, and Westfield State sanatoria for favorable cases of pulmonary tuberculosis and will leave local hospitals the function of caring for consumptives in advanced stages.

The Lowell tuberculosis hospital and the tuberculosis ward of the Anna Jacques Hospital at Newburyport have been nearly completed. Two hospitals, the Everett Tuberculosis Hospital and the tuberculosis ward of the Waltham General Hospital have been closed.

Employment has been offered by the sanatoria to discharged patients who are adapted to the work. At North Reading Sanatorium, 17 have been employed; at Westfield, 59; at Lakeville, 15; at Rutland, 169.

The educational work carried on by the State has been increased; many letters touching on every phase of the tuberculosis question have been written to physicians, patients and their friends, and anti-tuberculosis workers, not only in Massachusetts, but all over the country.

PREVENTION OF INFLUENZA.

UNDER date of December 21, 1917, the following circular letter was issued by Dr. William C. Woodward, to the profession of Boston:

Like many other cities, Boston is apparently destined to suffer a secondary influenza epidemic. The amount of sickness and number of deaths resulting therefrom will depend largely upon the extent to which our people themselves can be induced to avoid unnecessary contact with others who may be sources of infection and to take personal precautions when necessarily called on to come in contact with the sick.

Reporting.—In accordance with Section 50 of Chapter 75 of the Revised Laws of the Commonwealth, the State Department of Health has declared influenza to be a disease dangerous to the public health, and since October 4, 1918, has required physicians to notify local boards of health of all cases which may come to the knowledge of physicians, under the penalty provided in the statute for failure to do so. The death certificates filed at this office daily show, however, that many cases of influenza are not being reported by physicians as they are required to do by laws of the State.

Coöperation to Prevent Influenza.—Besides calling your attention to your legal obligation to report at once every case of influenza which may come to your knowledge, this department desires to urge you both as a professional and civic duty to give this department your active coöperation in efforts to save lives in this city by trying in every practicable way to prevent the possible spread of infection of the disease. To this end you are requested to give the following your earnest consideration.

Colds to be Treated as Influenza.—There is no known method, laboratory or otherwise, by which an attack of influenza can be differentiated from an ordinary cold or bronchitis. Supposed ordinary, mild colds are undoubtedly an important factor in the spread of influenza. In instances of uncertainty of diagnosis, therefore, it would seem that the interests of the community at the present time demand that every doubtful case be regarded as a case of influenza—at least in so far as isolation, etc., are concerned, if not for purpose of reporting.

Sleep Alone.—Like most contact diseases, a case of influenza is most contagious in the beginning, and many lives would be saved this winter if everyone could be prevailed upon to sleep alone. Any symptoms suggestive of a cold should be regarded in any event as a sufficient reason for insisting not only on a separate bed but a separate room.

Channels of Infection.—Evidence seems conclusive that the infective micro-organism or virus of influenza is given off from the nose and mouth of infected persons, and must gain access to the nose, mouth or throat of a susceptible person in order to transmit the disease. Droplet infection, the spraying of the infective agent into the air in the immediate vicinity of the infectious person, through his coughing, sneezing or talking, and soiled fingers or directly contaminated food or eating or drinking utensils may for all practical purposes be regarded as the means of transmitting the disease.

Infection Through Soiled Eating Utensils and Soiled Hands.—In giving instructions in a family, the advisability of boiling the eating and drinking utensils of the patients, and of washing the hands of members of the family other than the patient, immediately before eating, should not be overlooked.

Masks.—Masks, properly used, are to be advised for those in immediate attendance upon the sick or necessarily in the sick room.

Selection of Nurses.—Persons over 40 years of age seem less susceptible to influenza than those between 20 and 40. This fact should be considered when choice of an attendant for the sick in a household is possible.

Hospital Treatment vs. Home Treatment.—Home treatment is to be preferred. It may be contraindicated by the absence of medical or nursing care or other necessary facilities in the home, or by the absence of adequate accommodations for the isolation of the patient. With respect to patients suffering from mild attacks hospitalization may result in cross-infection that would not otherwise occur. The objection to hospitalization in the case of the patient seriously ill lies in the danger to the patient incident to removal.

Isolation of Suspects.—It is highly desirable at this time that persons who are coughing or sneezing be kept out of street cars, offices, factories, shops, or elsewhere where people come in close contact. Physicians will perform a public service if they can prevail upon such persons to stay at home.

Placarding.—This department is prepared to placard houses where persons suffering from influenza disregard instructions for the protection of others.

Crowded Cars, Stores, etc.—Crowded public conveyances are a serious menace to public health, and physicians are requested, whenever they can, to induce persons to walk at least a part of the distance, in going to and from work. Shopping should be done at times when stores are least crowded. Unnecessary visits to crowded places of amusement should be avoided, and patronage given in any case only to places that are clean and well ventilated.

Educational Literature, etc.—There are enclosed circulars relating to influenza and the making of masks, with a view, subject to your approval, to distribution in the families of your patients. If additional copies be desired they will be sent you on application. Circulars will soon be available in Italian and Yiddish.

If the Health Department can coöperate with you in any way—either with respect to the safeguarding of your patients suffering from influenza, and their families, or otherwise—it will be glad to do so.

Correspondence.

AN UNUSUAL SEQUELA OF INFLUENZA.

France, 1918.

Mr. Editor:

During a recent epidemic of influenza a small number of cases (five of those under my care) has had a sequela of which, in the literature available, I can find no mention.

The first man in whom it was seen had recovered from his acute symptoms—high fever and general malaise—two days before, when he suddenly complained of sharp pains in his left upper quadrant. His physical examination was entirely negative, and I came to the conclusion that he was "swinging the lead" and sent him to a convalescent camp the next day. Shortly after this I, myself, was attacked by the germ and, on the afternoon of the day on which I considered myself well I began to have very sharp rhythmic pains in the left upper quadrant, coming at short, regular intervals and lasting a few seconds at a time, exacerbated by deep inspirations but appearing even when I remained perfectly quiet and did not breathe at all. The pains resembled in their intensity those caused by stretching of smooth muscle. At the end of about five hours they became less severe and less frequent and gradually died away.

I was not examined physically, but since I recovered I have had three more cases whose history and story resembled mine, and whose examination was negative save for very slight tenderness over the spleen. The spleen was not palpable, there was no spasm of the abdominal muscles, and lung examination revealed nothing.

LIEUT. PAUL R. WITHERINGTON, M.D.

LIST OF PHYSICIANS ENGAGED IN INDUSTRIAL PRACTICE.

Harrisburg, Pa., Dec. 23, 1918.

Mr. Editor:

Will you kindly call attention in the next issue of your JOURNAL to the fact that Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Department of Labor and Industry, Harrisburg, Pa., is desirous of obtaining a complete list of all physicians engaged in the practice of industrial medicine?

It has been the practice of this Department to hold semi-annual conferences of industrial physicians and surgeons, for several years. These conferences are well attended and a great deal of valuable matter is presented in the discussions. In order to reach all physicians interested, it is desirable to have their names upon our mailing list. The next conference will be held early in 1919 and it is, therefore, essential that the names and addresses of all industrial physicians and surgeons be in my hands as soon as possible after January first.

Expressing to you my deep appreciation for your courtesy in calling this matter to the attention of your readers, I am,

Very sincerely yours,

FRANCIS D. PATTERSON,

Chief, Division of Hygiene.

RECENT DEATHS.

DR. CHARLES WHITNEY HADDOCK died on December 13, at his home in Beverly. Dr. Haddock was born in Beverly, June 3, 1856. He studied at the Harvard Medical School from which he was graduated in the class of '79. Dr. Haddock had been ophthalmologist and otologist at the Beverly Hospital and a special examiner at the United States Pension Department and medical examiner for the Seventh district, Essex County. He was a member of the Massachusetts Medical Society, from which he resigned in June, 1916, and of the American Medical Association.

DR. WILLIAM HODNUTT BUTLER, a Fellow of the Massachusetts Medical Society, died at Fall River, on October 11, 1918, at the age of 51.

DR. EDWIN E. JONES, of North Stratford, N. H., was killed in an automobile accident on December 28. He was born in Loudon in 1870. In 1894 he was graduated from the Dartmouth Medical School. He practised in Norwich, Vt., and in Concord, and later established a hospital in Colebrook.

DR. HENRY G. BEYER died recently in Washington, D. C. He was born in Saxony in 1850. He came to this country and served for 36 years as medical director of the Navy, from which he retired six years ago. For three years he was fleet surgeon of the Pacific Fleet. He was a delegate to the International Congress in 1907, and was president of the Military, Naval and Tropical Departments five years later.

MAJOR JOSEPH B. BISSELL died recently at the age of fifty-nine at his home in New York. He was born in Lakeville, Connecticut. He was a graduate of Yale University, took his degree in medicine at Columbia, and later studied at Munich and Vienna. Before the United States entered the war, Major Bissell went to England to instruct surgeons in the use of radium for infected wounds. At the time of his death, he was radium expert and chief surgeon at Fort McHenry, Baltimore.

DR. JOSEPH A. MARIN died on December 7, at his home in Holyoke, after a week's illness with pneumonia. Dr. Marin was born at St. Pie, P. Q., and graduated from St. Hyacinthe College in 1855. Later he entered Laval College where he completed his medical course. He then went to Holyoke where he was a practicing physician for 29 years. He was active in politics and served as alderman-at-large in 1899 and 1900. In 1902 he was elected city physician and appointed a member of the board of health.

DR. WILLIAM TURNER PARSONS died at the age of thirty-seven on November 30. The cause of his death was pneumonia. Dr. Parsons was born in Oswego, New York. He completed his studies at Johns Hopkins University, Baltimore. He specialized in diseases of the eye, ear, nose, and throat, and for two years was instructor of pathology in Johns Hopkins University. For several years he practised in Washington and later in Palmer. He was a member of the American College of Surgeons and the American Medical Association.

DR. DONALD H. CURRIE, surgeon of the United States Public Health Service, port physician of Boston, and regarded as probably the foremost authority on leprosy in America, died recently of pneumonia, following an attack of influenza, at the Contagious Hospital in Brookline. Dr. Currie was educated in public and private schools in St. Louis and received his degree in medicine from the University of St. Louis. He practised a full year as interne after being admitted to practice, and then, in 1899, joined the United States Marine Hospital service. At that time he was only 23 years old, and was one of the youngest men—if not the youngest—at the time in the marine medical service. He served in Honolulu on two separate medico-military assignments and later was stationed at San Francisco. He later was assigned to serve in the United States laboratory in Washington. Six years ago Dr. Currie was sent back to Honolulu in charge of the Molter leper colony there. Coming East, he was assigned to the United States Marine Hospital here and served also on Gallups Island. Dr. Currie assisted in stamping out the bubonic plague in San Francisco and in the yellow fever epidemic in New Orleans. In 1909 he was selected as the United States representative to the leprosy congress in Bergen, Norway.

The Boston Medical and Surgical Journal

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Original Articles.

THE WORK OF AN AMERICAN SCHOOL FOR THE REHABILITATION OF THE DISABLED.

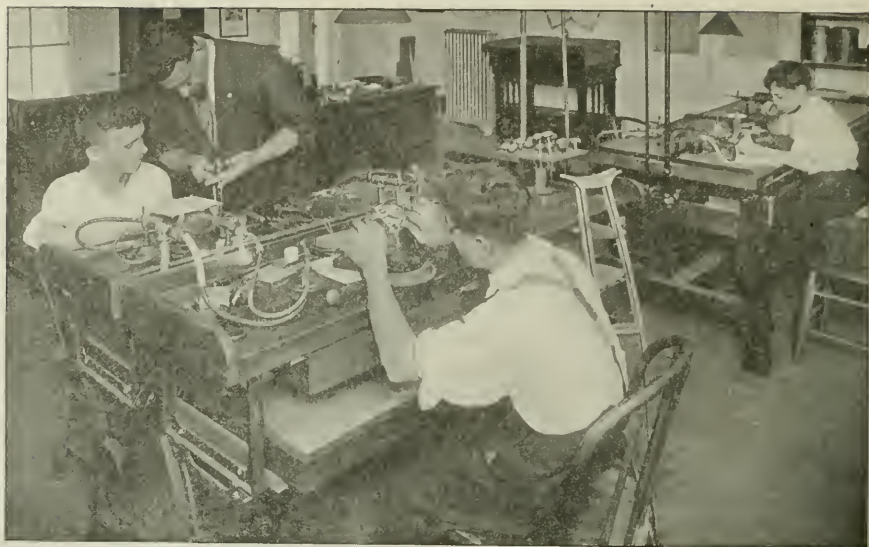
By DOUGLAS C. McMURTRIE, NEW YORK.

Director, The Red Cross Institute for Crippled and Disabled Men; President, Federation of Associations for Cripples.

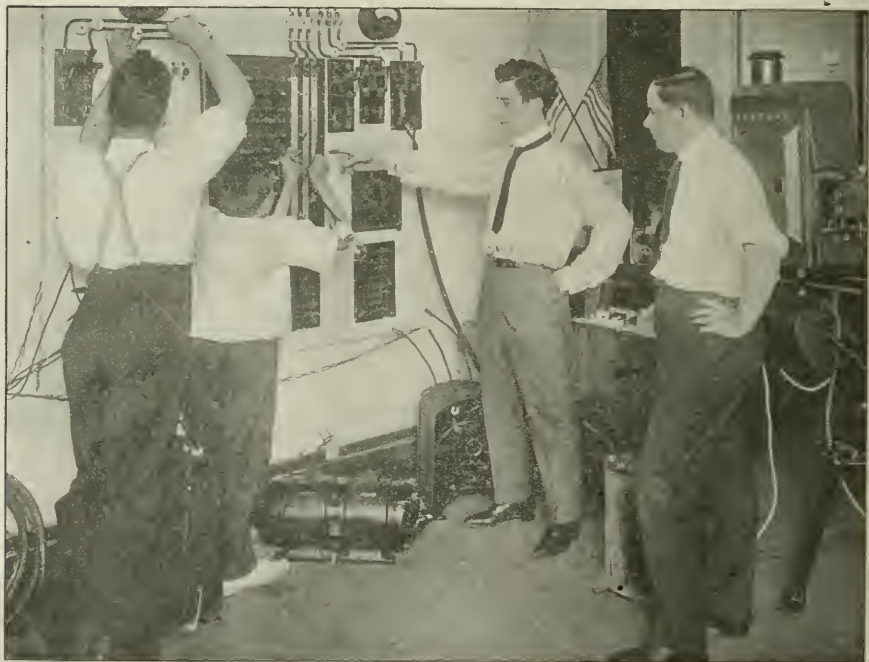
BEFORE the United States had been at war a month, before the first 50,000 men had been sent overseas, a group of persons interested in industrial training for cripples saw the necessity of making provision for the economic reconstruction of American soldiers when they should return home wounded and maimed. The experience of France, Italy, and the other allied countries had shown that the way to help the crippled soldier to rebuild his life was to teach him a trade in which he could earn a decent livelihood despite his injuries. If we in America were to profit by European experience, it was clear that we should prepare at once to give our American *mutilés* the needed trade training. In the belief that the American Red Cross was the agency which could most successfully sponsor such a scheme, those interested in the project proposed to the Red Cross

that it should organize a school where disabled soldiers could be taught to be self-supporting. At the same time, Mr. Jeremiah Milbank of New York City offered to supply the necessary funds and to give the use of a building for the school. The proposition was favorably acted upon by the Red Cross, the offer accepted, and in the autumn of 1917 there came into being the Red Cross Institute for Crippled and Disabled Men.

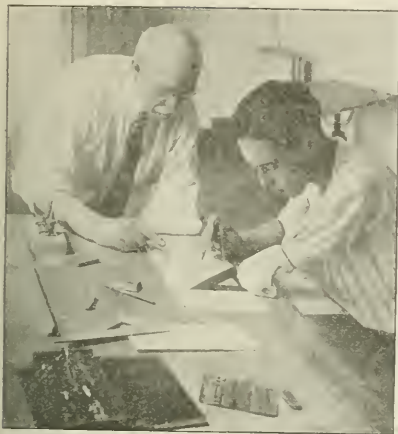
It will be noted that the organization has been officially designated an institute, not for crippled and disabled soldiers, but for crippled and disabled *men*; its benefits are extended to the cripples of peace as well as of war. Here in America the number of men annually crippled in industrial accidents is very large—the most conservative estimate puts it at 80,000—yet there has been no attempt to solve in a broad way the problem of their reestablishment in industry. The organizers of the Red Cross Institute decided, therefore, that in order to make their work of the greatest value to the nation, they should undertake to reconstruct not only the disabled soldier but the disabled industrial worker as well. They also saw that the best way to build up an efficient organization for the reeducation of the future returned soldier was to start at once with civilian cripples. The disabled soldier is, of



JEWELRY CLASS, RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN.



MOTION PICTURE OPERATORS IN THE MAKING. DISABLED MEN ARE PREPARED TO TAKE EXAMINATIONS FOR CITY LICENSES IN THE CLASS OF THE RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN, 311 FOURTH AVENUE, NEW YORK CITY.



ONE-ARMED INSTRUCTOR AND PUPIL, MECHANICAL DRAFTING.

course, a very different type from the man who has been injured in an accident and a long time out of work. He is separated as by a chasm from the congenital cripple, but practice in training the one is bound to throw light on the reëducation of the other.

The Institute's part in the reëducation of American soldiers depends on the extent to which it is utilized by the Federal Board for Vocational Education, the government department charged by law with responsibility for the vocational rehabilitation of the disabled men of the American forces. Since the Federal Board has announced that it will, as far as possible, make use of existing facilities for training, the Institute is prepared to receive soldier pupils who can profit from its instruction. Through its experience with training civilian cripples the Institute believes that it is able to offer reëducational facilities of real value to the disabled soldiers now returning from abroad. Comparatively few of these have as yet been discharged from the Army and made eligible for reëducation: now that peace is here the total number will never be more than a small fraction of the number of the disabled in France and other allied countries. It may well be, therefore, that the greatest work of the Institute will consist not in helping our disabled warriors to rebuild their lives, but in salvaging the less renowned victims of the industrial struggle. Having undertaken this task, the In-



OXY-ACETYLENE WELDING ROOM OF THE RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN, 311 FOURTH AVENUE, NEW YORK CITY.

stitute, unlike many of the European reëducational schools, will be a permanent institution.

Six trades are being taught at present, with the probability that others will be installed as the demand develops. The selection of these trades has been governed by the same general principles that have formed the basis for selection in Europe: the suitability of the trade for handicapped persons, the length of time required to learn it, the standard of wages, the demand for workers, and the attitude of the trade toward apprentices.

The first shop installed was for the manufacture of artificial limbs. This trade was known to be suitable for men with leg injuries, for numbers of them were already employed by the different limb manufacturers of the country. It was seen that there was no prejudice on the part of employers in the trade against disabled men; indeed, men who have had a leg amputated are considered an asset to the business, since they can be utilized in demonstrating as well as in producing. A man who has lost his leg seems, moreover, peculiarly suited to work on artificial limbs; he knows from his own experience more about the fine points which make for comfort and usefulness in a leg than a normal workman can ever learn from others. The demand for limbs, and, as a consequence, for skilled workmen, has, of course, been greatly increased by the war.

Another factor influencing the Institute to manufacture artificial limbs was the desire to

improve existing models and to standardize materials and design by scientific research and experimentation. To this end the Institute has entered into correspondence with the military hospitals and reëducational centers abroad that manufacture artificial limbs, and has secured specimens of the limbs now being used in Europe. It has fixed upon a model for a leg of the so-called American type, but it is still studying the problem of the working-arm.

A further consideration was the discovery that the first requirement of many applicants for aid was a limb. Until they were supplied with one, little hope of training or employment could be held out to them. By manufacturing the needed appliances in its own shop, the Institute is able to supply them at a much lower cost than would otherwise be possible. Just recently the Institute has made an agreement with the Bureau of War Risk Insurance whereby it will manufacture limbs in quantity to be furnished, through the Bureau, to American soldiers who have undergone an amputation.

Production in larger quantities than the trade has been accustomed to is possible in the Institute's artificial limb shop through the use of modern machine methods. The hand work in roughing out a limb has been greatly reduced by a lathe which turns out the wooden parts according to standard models. Another lathe, specially designed and built, automatically hollows out the stump socket in conformity to a plaster cast of the stump. The shop is also equipped with extensive bench facilities for hand work, with a gas forge and anvil, nickel-plating facilities, special sewing machines for leather work, lathes for wood and metal work, a drill press, grinding and polishing machines, a band saw, and a sanding machine. Plaster casts are made from stumps and finished limbs adjusted in a separate fitting room.

Most of the pupils who have been trained have been kept on as paid workmen.

Printing, the next trade to be installed, is known to employ at good wages a steadily increasing number of men. In fact, it stands sixth in importance among the industries of the country, and in the New York district ranks third. The shop is equipped as a complete printing office, but for the present it is specializing on teaching the operation of the monotype-caster. This can be learned in a reasonably short time and is within the powers of

a man with an injured leg, even with an amputated leg, if he can stand part of the time without discomfort. The demand for capable caster runners and machinists far exceeds the supply. A two-months' course of training has fitted the Institute's pupils to obtain positions as runners at \$16 a week; some months' additional experience enables those who have ability to earn from \$30 to \$35 a week as machinists in charge of operation.

Although two good hands are, as a general rule, considered requisite for the work, there has been admitted to the class a former hand compositor who had suffered an injury to his right hand. Two fingers had been amputated and the remaining two were stiff. With his past experience in a printing shop to help him, he was able to finish the training in eight weeks and then to obtain a position at \$19 a week. The foreman of the shop is now willing to accept as pupils men who have one good hand and the thumb and index finger on the other.

The operation of the monotype keyboard, a process very similar to typewriting, can be done by a man with both legs amputated or with other severe injuries which make seated work necessary, but there are union rules which bar keyboard work to anyone without five years' experience in the printing trade. A good keyboard operator can earn about \$30 a week, and the field is an excellent one for cripples.

The mechanical drafting class was started primarily for the purpose of providing training for men and boys who have lost an arm. When it was first proposed that such a class should be started, leading engineers were questioned as to the possibility, in their opinion, of a one-armed man's becoming a successful draftsman. The replies were unanimous that the work was out of the question for men who had not two good hands. It was known, however, that in the reëducational schools of France drafting had offered good opportunities for men with arm injuries, and the Institute resolved to make the experiment. Desiring to secure as teacher a man who would have the needed confidence in the capacities of his pupils, the Institute sought as instructor a one-armed man. A man so handicapped was found, and under the inspiration of his example and teaching a number of one-armed men have successfully completed the course.

The first pupil was a Scandinavian who had

lost his left arm in a lumber mill. In his search for work he had drifted to New York and obtained a job as messenger at \$7 a week. He was interested in lettering and sign-painting but had been unable to obtain employment in that line. After three months' training in mechanical drafting, he has obtained a position with one of the large engineering firms of the city at a salary of \$16 a week. Another pupil had lost his right arm at the elbow. After slightly longer training, during which his left hand learned to use his instruments and his sensitive stump to hold the T-square and triangle, he was advantageously placed with a maker of thermometers. One of the most severely crippled men that the Institute has been able to help, a man with strong arms but with no power to move legs or back, received special training in small patent office drawings, being unable to bend over the board, as required by larger drawings. His work was so good that he left the class for a position in the Edison Laboratories. The first pay envelope he had ever received contained for one week's work \$25. Another pupil still in the class has lost both legs and one arm.

Graduates of the class are, of course, not expert draftsmen. They have simply received a thorough training in tracing and a grounding in detailing; more cannot be done for them in a course lasting only a few months. The object of the course is to enable them to secure and hold down a position in which they can earn a living wage while they are perfecting their skill.

The course in oxyacetylene welding and cutting, judged by the rapidity with which the pupils are placed and the wages they receive, is one of the most successful at the Institute. In shipbuilding, in motor construction, in the maintenance of railways, and in all machine repair work there is a crying demand for men who know how to use the oxyacetylene torch. So eager are employers to obtain trained workmen that they come to the shop and take the pupils away before they have finished the course. The trade is a popular one with disabled men because it can be learned in a short time and because the wages are very high considering the degree of skill required. Welding is taught in from four to five weeks; cutting in an even shorter time. The wages earned by graduates average about four dollars a day.

Fortunately the trade is within the capacities of a one-armed man, always the most difficult subject to retrain or place in employment. In the experience of the Institute welding can be done by a man with one good hand to manage the torch if the other arm is fitted with a working appliance capable of holding the strip of adding metal; cutting requires only one hand. One of the earliest pupils in the shop was a former boilermaker who had lost his right arm. He is now earning \$4.15 a day. Another was an untrained Italian boy with a badly maimed hand. He has now a good position with a street railway company. Just recently there entered the class a man who had been a worker on submarine fittings, a skilled mechanic incapacitated by an injury to his left hand. After training as a welder, he went back to the shipyard to earn as much as before the accident. His injured hand, moreover, is constantly improving under the exercise he gets from the work.

The equipment of the welding shop consists of six welding stations, a cutting station, anvil, cutting shears, welding tables, and a gas generator. It is housed in a small one-story brick annex built for the purpose. A torch with a slightly different control has been devised for men who must hold it in their left hand.

Motion picture operating, also, is a rapidly growing industry, and in consequence the demand for trained operators far exceeds the supply. Under these conditions the wages are naturally good. The training period is also brief; the Institute course enables a pupil to qualify for a license as operator in from three weeks to a month. He can then begin to earn \$20 a week, with the prospect of an increase as he becomes more proficient. Many disabled men find the opportunities offered in this field very attractive, and the course has been well attended. In no case has there been any difficulty about placing the men in good positions. Men with leg disablements are not at all handicapped if they can stand: operators must, however, have two good hands.

The first man that applied for the training was a sailor who had been severely injured by an explosion on a battleship. The necessity of returning to a hospital for further treatment interrupted his course, but he is determined to return and finish so that he can join the men overseas as a Y. M. C. A. operator.

For teaching purposes the classroom is equipped with two projectors, a large asbestos

booth, and such electrical apparatus as is needed to give a thorough understanding of the work. The booth is so situated that films can be shown in the large auditorium as well as in the classroom, an arrangement which permits the knowledge of the class to be put to practical use. A textbook for the use of classes in motion picture operating has been prepared by the instructor and is now being set in type in the printing shop.

The class in jewelry making, recently installed in the Institute, has been conducted for the benefit of crippled and deformed boys, under other auspices, for the past nine years. It has in that time clearly demonstrated its usefulness. The course is longer than others at the Institute; a period of from eight months to two years, depending upon the talents of the individual boy, has been found necessary to give pupils the grounding in the trade which they must have in order to secure employment. For grown men, disabled by industrial accidents and eager to obtain a paying job as soon as possible, the time is too long. Boys well-trained in the elements of the trade have easily obtained employment.

In the case of disabled soldiers or sailors there is no difficulty about their maintenance during training. By the terms of the rehabilitation law they and their families are supported during the period of training. How civilians disabled by accident or disease are to be supported while they are attending classes is more of a problem. For a certain period of time after their accident workmen disabled in industry receive workmen's compensation; if they take their training before the time limit is up, the compensation will often suffice for their support, but the general tendency among men receiving compensation is not to seek either employment or training until their compensation is exhausted. Then, when destitution is staring them in the face, they apply at the Institute for help. These cases, if accepted for training, have to receive a maintenance allowance from the Institute. The money is not given to them outright, for there is no wish to make them forfeit their self-respect by accepting charity, but it is paid out of a special fund in the form of a loan without interest. Later, if the training has enabled a man to better his situation, he is expected to return the loan in easy payments. Some men, reluctant to burden their future with a debt, prefer to support

themselves during their training by evening or part-time work, even if they are thereby compelled to spend a longer period in the school. The Institute has thought it wise to help such men in obtaining work and to make special regulations about the hours of their attendance in classes. In shops where the pupils are engaged in productive work, as in the artificial limb shop and in the printing shop, and part of the time in the drafting and jewelry classes, the pupils receive small wages proportioned to their skill.

Every effort is made by the Institute to get in touch with disabled men as soon as possible after their accident, and to describe to them, before they have become habitually idle and hopeless, the benefits held out by trade training. Constant relations are maintained with State industrial commissions, and a number of men have been sent to the Institute with liberal allowances for maintenance by commissions which thought this a wiser and more economical plan than long-continued compensation payments. The hospitals of the city are regularly visited by an experienced social worker, who talks with patients likely to be permanently disabled and tries to interest them in the training courses.

Many cripples have first learned that a man is not necessarily down and out just because he is disabled through a series of evening "parties" held at the Institute. Cripples from all over the city, all whom the Institute has record of, are invited, and a goodly number usually attend. The evening's entertainment is designed to arouse their ambition by showing them how other disabled men have overcome their handicaps. Lantern slides and moving pictures show how the war cripples of Europe have been trained in gainful occupations; other specially prepared films give a close-up view of the way certain severely crippled men have managed to live and work. In between the pictures disabled men who have made a success of their life tell of their experiences. The effect of such examples on men who have long thought there was no use in trying cannot be overestimated. In the days following these parties there is always a notable increase in the applications for employment or training.

Newspaper articles describing the work of the Institute are used to bring its facilities to the attention of men who cannot be reached in any other way.

When pupils have finished their training

courses, positions are secured for them by the employment department of the Institute. This department runs the only employment bureau for cripples in the city, placing not only pupils of the Institute, but all cripples who want work. Cripples are so difficult to place—the task demands so much special knowledge and individual attention—that the public employment offices can do little for them, and the need for a specialized bureau was very real. In the first ten months 700 cripples were registered, and 620 definite placements were made.

After a man has been placed, the bureau endeavors to keep in touch with him for some time. On one evening a week the office is kept open, and the men are asked to come in and tell how they are getting on. If they are having difficulties with their employer, the bureau attempts to make the necessary adjustments. When a man fails to call, a representative of the Institute visits him at his home or interviews his employer. Without such follow-up work the Institute feels that placement may be but temporary and valueless.

Training and placement are but two of the activities of the Institute. Its other work is national in scope, comprising the maintenance of a large library on the rehabilitation of cripples, the operation of an extensive department of research, the making of industrial surveys to determine employment opportunities for the disabled, and the conduct of a vigorous campaign of public education to inculcate a more constructive and helpful attitude toward the disabled. These activities, which cannot be described within the scope of the present article, are considered as important, if not more important, than the functions of training and placement.

INFLUENZA: IS IT A HAZARD TO BE HEALTHY? CERTAIN TENTATIVE CONSIDERATIONS.

By D. B. ARMSTRONG, M.D., FRAMINGHAM, MASS.

Assistant Secretary, National Tuberculosis Association; Executive Officer, Framingham Community Health and Tuberculosis Demonstration.

In an unstable situation complicated by numerous unknown quantities, as is obviously the case with reference to the prevailing pandemic of influenza, discussion is apt to be based on

casual individual observation rather than on scientific analysis of group facts. Nevertheless, it is frequently the case that scientific attention to the apparent indications of these relatively irresponsible observations may lead more or less by chance to discoveries of profound importance. Consequently, it has seemed to the writer to be of theoretical interest and, possibly, of practical importance to attempt an analysis of one of the prevailing opinions among the medical profession, in reference to so-called influenza and its complications.

At the American Public Health Association Conference in Chicago, during the week December 9 to 14, where much attention was given to influenza, the opinion was frequently expressed that the disease seemed to be characterized by a special virulence, and by a relatively high mortality among those individuals in the prime of life who, before the attack, had been in the best of physical condition and freest from previous disease. In other words, "influenza kills the husky!" If this is true, are health educators justified in advising the hygienic life as a measure of protection against the disease? Is it reasonable to assure the public that the pink of physical condition is a protection against infection? Is the "Keep Fit" doctrine sound? What should be our policy if influenza is most likely to attack and to kill the healthy.

It is safe to say that this assertion is made by competent clinical observers in both army and civilian life. Is it a valid assertion? Certainly it is one of the findings of common experience, universal enough to justify serious attention. Yet an analysis of certain figures may indicate that this semi-popular medical opinion may be in part misleading.

It is evidently true that the disease has a relatively higher mortality among the "husky" than it has among the weaklings. Is this a relative or an absolute difference? Certainly both the incidence and the fatality rate seem to be relatively less among the under-nourished, the physically handicapped, the anemic, and the tuberculous (either active or arrested). May it not be, however, that the difference is only a relative one, and that the variation from a theoretically normal incidence and fatality rate (of course undetermined) is rather in the direction of a relative degree of protection for the weak, than in the direction of a relative degree of susceptibility for the strong? May it not be that

it is not so much that the husky die, as that the weak live?

In Framingham, for instance, where, owing to the organization of the Community Health and Tuberculosis Demonstration, a reasonably careful analysis of some of these factors has been possible, it is found that in the first epidemic (excluding the subsequent recurrence), whereas about 16 per cent. of the entire population was infected, only 4 per cent. of the tuberculous group in the community was infected. Furthermore, most of these tuberculous cases were of the arrested type, and were going about the community, taking part in industry, exposed to the same degree of contact as was the case with the normal population. Indeed, when the arrested group is considered by itself, excluding active cases under treatment at home, the rate of incidence of disease is only 2 per cent. Findings from other communities presented at Chicago bore out the Framingham experience. It would certainly seem from this that the under-par people, particularly the tuberculous, had less influenza than the supposedly normal group. It may also be stated that the fatality rate was equally in contrast to that for the town as a whole.

Data from other communities, indicating another approach to this same problem, based as yet, it is true, on observation rather than on statistical findings, would indicate a similar relative degree of protection for the highly tubercularized. It is stated that in Washington, D. C., and in St. Louis, where there are large negro populations, the extent of influenza, fatal and otherwise, was relatively much less among this negro population than for the white population, or for the cities at large. Everyone is, of course, familiar with the high degree of tubercularization among the negro population wherever found. While this is, perhaps, not a complete refutation of the assertion that the husky succumb more readily to acute respiratory disease, it does indicate that, possibly, "the shoe may be on the other foot," and that those individuals who are suffering, or who have suffered, from a chronic respiratory disease have a relative degree of protection against an acute infection of a respiratory character. In any event this problem would seem to justify further study. At any rate, it looks as if the really conspicuous factor was the comparative immunity of the "weak."

Army medical officers have frequently asserted that in the camps the northern boy lived while the southern boy died; the city boy lived, while the country boy died. One ordinarily thinks of the country boy as the huskier type. Is he not also less frequently immunized because of his less frequent and constant infection and exposure? Is he not less frequently tubercularized? Is not the northern city boy, while apparently less healthy, favored by a natural process of vaccination through chronic respiratory disease against acute infection?

It has been further stated that this supposedly superior susceptibility for the healthy individual is true for all types of the acute infection. Assuming that the observation is based on the fact of a *relative* difference, as pointed out above, is it true that this difference applies to acute infectious disease in general? It has been asserted, for instance, that in typhoid epidemics, the big, strong, healthy, previously above-par individual is the one who falls the readiest victim to fatal disease. Is this true for typhoid fever, or is it rather that the typhoid infection lowers the resistance to the establishment of acute respiratory disease, and the husky individual, previously "unvaccinated" succumbs to the acute respiratory complication? This, of course, is apparently what happens in so-called influenza. It has been generally accepted that the present epidemic is a disease caused by a micro-organism at present unidentified, a disease which is characterized by a lowered resistance, permitting the invasion of pulmonary tissue by the influenza bacillus, one or more forms of streptococci, one or more forms of pneumococci, etc.,—an invasion apparently secondary to the initial attack. It would be interesting to see if an analysis of mortality among the husky in a typhoid epidemic would not show that the apparent relative susceptibility of this type of individual was based on a difference in resistance to respiratory disease rather than to typhoid fever.

If it is true that a variety of natural vaccination through chronic respiratory disease gives those partially incapacitated by the chronic diseases a relative degree of immunity against acute respiratory invasion, is it a problem of immunization alone, or is there, back of this factor, a race stock factor that must also be given some consideration?

It is known, as was demonstrated in a study in Washington, D. C., several years ago, that

negroes, exposed to similar environmental conditions as whites, will have tuberculosis morbidity and mortality rates two or three times the rates found in the white stock. As was pointed out above, it is believed, though not yet definitely statistically certified, that a corresponding difference, in reverse ratio, exists between these two race stocks as regards influenza morbidity and mortality.

In Framingham, where it has been possible to study both the tuberculosis and influenza situation from the racial point of view, the chief contrasts have been found between the Irish race stock on the one hand, and the Italian race stock on the other. An examination of a large percentage of the population, showing an incidence of 2.16 per cent. for tuberculosis (active and arrested), for the groups as a whole, indicated an incidence among the Italians of .48 per cent., in contrast to an incidence among Irish stock of 4.85 per cent. This same difference is borne out in a more extensive way by a recent analysis of New York State mortality findings by Dublin. In the influenza epidemic, on the other hand, from figures based on reported cases in the initial outbreak, it may be stated that there was reported approximately four times as much influenza and pneumonia among the Italians as was reported for the rest of the community, made up in large part of Irish and Irish-American stock either foreign born, or first and second generation native born. Here we find a race stock with a high susceptibility to tuberculosis and possibly a relatively great immunization by this chronic respiratory disease against acute respiratory infection, presenting a comparatively low incidence of acute respiratory disease, in contrast to a race stock relatively resistant to the tuberculosis, consequently unimmunized against acute respiratory infection, and consequently showing a correspondingly large amount of acute disease.

All of these Framingham findings are, of course, based at present on comparatively small numbers and incomplete returns, and are, therefore, inconclusive. They are stated with reference to the initial influenza outbreak—possibly the recurrence of the disease may alter the tentative conclusions. In any case, they are presented merely as suggestions, possibly carrying sufficient validity to justify an hypothesis, indicating the desirability of similar and, if possible, more accurate analyses elsewhere to substantiate or re-

pudiate the hypothesis. If the theory is based on an element of truth, is it race stock alone that is responsible, is it race stock plus natural vaccination, or are there other unknown biological and, perhaps, statistical factors concerned? In any case the initial casual assumptions seem to indicate the desirability of further study. Age and sex factors must be considered. Environmental problems must be studied and compared. The special knowledge of the immunologist and the biologist must be brought into play.

Should subsequent investigation prove that chronic respiratory disease, regardless of the race stock factor, and particularly tuberculosis, serve as a measure of protection against acute disease, what would be the bearing of this conclusion upon the hygienic program? It would seem that it is only a relative and not an absolute hazard to be healthy. Certainly the advantages of being vaccinated against acute infection by chronic disease are outweighed by the cost to the individual and the community of the chronic disease itself. The present high incidence of tuberculosis morbidity and mortality is scarcely justified as a preventive measure against the relatively incidental, sporadic, and less costly acute infection. At all events, if an immunity thus acquired through "natural" channels can be demonstrated to be of distinct worth, the solution of our problem must be found, as was the case with smallpox, in the perfection of an artificial immunization procedure, eliminating the tremendous price which society may now be paying in order that the weak, under certain conditions, may have a better chance than the strong.

The suggestions, as considered above, at least illustrate the necessity for approaching the problem with an open mind, for following up the leads by scientific study, and for meeting the opportunities of public hygiene in a spirit characterized less, perhaps, by an attitude of ready assumption and more by an insistence upon fundamental imaginative inquiry.

LESSONS FROM A STUDY OF ONE THOUSAND DIPHTHERIA DEATHS.

By BERNARD W. CAREY, M.D., BOSTON.

Epidemiologist, State Department of Health.

A STATISTICAL study made by the Massachusetts Department of Health of one thousand deaths due to diphtheria has taught several interesting and important lessons.

Deeply concerned by the apparent apathy of physicians and organized health agencies towards the failure of the morbidity rate to decline while the mortality rate has been, so markedly reduced by the use of antitoxin, the department started an investigation to ascertain, if possible, what factors might be responsible for this condition and to remedy it if possible.

The fact that the morbidity curve has not followed the decline of the mortality curve means much, for in diphtheria we have one of the few conditions for which there is available accurate means for diagnosis both of the acutely ill, and of the healthy carrier, agencies for determining the susceptibility of persons with their subsequent immunization and specific therapy for treatment of the infected individual.

In order that the statistics might be uniform, blanks were prepared asking for the name, age, sex, school, social condition, date of onset, date of physician's first call, date of administration of antitoxin and amount, source of infection, form of the disease, date and cause of death.

From an epidemiological viewpoint, results were not different from what was expected, the age incidence agreed with figures set forth by the Federal Census Bureau, which states that "about 65% of all deaths from diphtheria and croup in the registration area for deaths occurred in children under five years." The statistics from our studies were as follows:

1 year or under	20.0%
2 years or under	13.4%
3 " "	11.9%
4 " "	9.8%
5 " "	6.9%
6 years	7.4%
7 " "	5.5%
8 " "	3.7%
9 " "	2.1%
10 " "	1.8%
11 to 15 years	3.0%
16 " 25 "	1.3%
25 " 60 "	1.1%
Age not given	12.1%
	100.00%

Sex. Creighton states that "diphtheria is the only epidemic condition, besides whooping cough, which is more fatal to females than males in proportion to the number of each sex living." In the earlier age groups a slight increase in the male deaths has been found, while in the later age groups, females were seen in increased proportion. When one considers that as a rule females come in closer contact with the infec-

tion, acting as nurses for those ill, it is perhaps apparent why this increase in the female groups should occur.

School. The influence that school plays in diphtheria infection is one of extreme interest and importance. As the greatest number of deaths occurred in children under school age, it might first appear that they were not under school influences; but, the question naturally arises, did they receive their infection from school sources, or are they the source of school infection which has been carried from the home? As far as is known at the present time, there have been no statistics to prove just how great a part the school plays in the distribution of diphtheria in the pre-school group. A special investigation is planned to determine, if possible, just what relationship may exist between these particular age groups.

In the later age groups the school factor plays a large part in the spread of diphtheria. In the rural communities, with little or no school supervision, the disease is apt to spread rapidly, and occur as an outbreak of varying size. In the city, where there is more efficient school supervision, the taking of cultures with prompt detection of healthy carriers, and incipient cases, giving earlier recognition of the disease, prove an admirable means of prevention, and of control of diphtheria outbreaks.

Social Conditions seem not to play a very great part in the deaths, for while the greater number occurred among the poorer class, a considerable number of deaths occurred among the more well to do.

The most common cause for this was in the group of unrecognized cases with its mild insidious onset resulting in the late attendance of the physician, and the late administration of antitoxin. It was also found that many of the deaths followed intubation. This, of course, is a procedure instituted late in the disease and when the heart muscle, weakened by toxic agents of the infection, was not able to withstand the strain of added muscular resistance of this procedure. The question arises whether it would not be better to do a tracheotomy, having the opening permanent, with resulting freedom in breathing, than to intubate with the risk of the intubation tubes coming out or becoming plugged with exudate, necessitating re-intubation.

Source of Infection. One result of the inves-

tigation showed that the source of infection was known in only 10.7% of the cases, and unknown, or not given, in 89.3%. Here is evidence that it is indeed hard to trace positively the source of infection when all groups of people are taken. It was found particularly difficult in the foreign element, who either could not or would not give the required information. Among the English speaking groups, there was marked evidence that the interest in the epidemicity of diphtheria was lacking even in those cities and towns where health officers are employed on full-time basis.

The axiom that scientific diagnosis must precede intelligent treatment might well be paraphrased to intelligent epidemiological investigation must precede efficient control of outbreaks, for we surely cannot reduce the morbidity rates of communicable diseases with infection sources unrecognized and at large in their communities.

The seasonal percentage incidence of deaths was as follows:

January	9.5	May	3.8	September	7.2
February	9.6	June	5.8	October	10.9
March	7.0	July	2.8	November	12.6
April	8.5	August	6.3	December	12.3
		Not given	3.6		

This is of value only to confirm other statistics which have been compiled from other sources.

Form of the Disease. In the study of the deaths, laryngeal diphtheria was far more prevalent than other forms; pharyngeal was next in order of frequency and nasal form last. Many physicians appear to feel that membranous croup is still a distinct disease and do not recognize it as a diphtheritic infection until too late. Perhaps one reason for the retention of this erroneous opinion is that due to faulty technique, positive cultures are seldom obtained in the earlier period of the disease. In order to obtain a positive culture in the beginning of this form of diphtheria, it is absolutely essential that cultures be taken from the larynx, and to do this a proper speculum, good light, and an assistant are needed. It is, however, under these conditions, perfectly feasible, and if employed would mean the earlier recognition of the disease and administration of antitoxin with resulting lowered mortality.

This difficulty of culturing does not exist, however, in the pharyngeal type and some other reason must be sought to account for the excessive number of deaths. One of the most prom-

inent appears to be that in many instances the condition is unrecognized and is treated as a simple tonsillar infection until too late for the antitoxin to be efficacious. The nasal type also plays an appreciable rôle in our deaths. Many histories show that this condition was unrecognized and the treatment in many instances was that for a catarrhal infection or "common cold."

The obvious deduction to be made is simply this: that a culture should be taken in all conditions where there is a possibility, even though remote, for diphtheria to be suspected. Here, without doubt, is the basic feature which plays the greatest part in keeping the morbidity and mortality rate higher than it should be and one that can be corrected if consistently borne in mind.

Causes of Deaths. In general, statistics classify the deaths in diphtheria as those due to cardiac, respiratory, or toxic causes. It seemed, however, that an analysis of these causes should be made to see if it would be possible to ascertain any more definite information as to the exact cause of death. Approaching this angle of the investigation by inquiring first the number of days the patients were ill without medical attention, our findings were as follows:

1 day	.....17	5 days	.....35	9 days	.....2
2 days	.....34	6 days	.....28	10 days	.....11
3 days	.....41	7 days	.....30	11 days, or over 20	
4 days	.....37	8 days	.....6	Several days	.....42

In other words, 23.1% were sick a week, 4.2% were sick from one to two weeks, and 4.2% were ill several days without medical attention.

It is amazing that so many children should be so neglected by those responsible for their comfort and welfare. Something must be done to awaken in these people their sense of responsibility. It appears that education of this group of individuals must be undertaken to arouse them from their state of indifference or ignorance. How this result is to be best obtained may vary with the individuality or locality, but it is perfectly clear that health workers, worthy of their vocation, should bend every effort to this end, doing their utmost to save from needless deaths these children who form the very foundation of society.

Health authorities for years back have impressed upon the medical and lay minds the necessity of the early administration of antitoxin to achieve the best results, and they can

hope to achieve this reduction in the mortality rate only by constantly emphasizing on every occasion the necessity of calling the physician early in the sickness, laying particular stress upon the fact that the mortality of diphtheria, when treated with sufficient dosage of antitoxin, given within twenty-four hours of onset, is relatively nil.

In some instances it was noted that physicians waited for a laboratory report from their cultures before administering antitoxin. This is, of course, a mistake and the dictum that a person needing a culture should have antitoxin administered at the time of taking the culture is one which should be reiterated until the procedure is generally adopted by the entire medical profession.

One other factor which stands out demanding comment is that 7.6% of the deaths occurred in "unrecognized" cases. Here, indeed, is a sad state of affairs, for with the numerous laboratories scattered throughout the State there is no need for diphtheria being unrecognized. The State Department of Health, through its bacteriological laboratory, is ready to examine all cultures which may be sent in to them, and will on all positive cultures telephone or telegraph, at its own expense, the report to the physicians who have sent in the culture. Surely, with this free service of our laboratories, the free distribution of antitoxin and Schick material for detection of the non-immuned, and the toxin-antitoxin mixtures of immunization, we feel that we have some right to expect that these facilities will be used to effect a diminution of the morbidity rate as well as the mortality rate.

An alarming percentage of 11.8 of our cases were found moribund upon visitation by the physician. Here again is evidence for the necessity of awakening people, through educational methods, to their responsibility to their children.

Another source of deaths which the investigation showed in larger proportion than is generally recorded was that of sudden death which was stated to have occurred in 5.2% of the cases. In many instances, lack of nursing care was the responsible factor. Parents, ignorant even of the fundamental principles of nursing, were entrusted with the care of their children, allowing them to get up out of bed too early, or, through a mistaken idea of kindness,

gave unsuitable food, which caused grave gastric disturbances resulting in vomiting, with its associate muscular strain and proving, in these instances, too much for the weakened cardiac muscles; and collapse, with death, resulted.

Another factor in the sudden death group appeared to be the repeated attempts at intubation where, for some reason, the tube was either not properly introduced or else expelled.

Antitoxin. The dosage of antitoxin was extremely varied in amount, the number of doses given, and the interval between dosage. In 29 instances, it was found that less than 3,000 units were administered. The amount increased from this to a point where a young child of three years received 225,000 units. The usual doses, however, seem to have been from 6,000 to 9,000 units. The number of doses varied from one to several on consecutive days, and in a few instances it was administered every four hours until death occurred. In one instance 80,000 units were given in this manner.

One striking feature was present,—in no instance did we find antitoxin given intravenously. In the early days of the use of serums there was a great deal of hesitancy in introducing directly into the blood stream foreign bodies, for fear of untoward effect, but with added years of experience it is now known that this procedure is not only feasible but that results are more rapid, more certain, and a much smaller amount of serum is required. It is most earnestly recommended that this procedure be used in those cases which are seen late in the disease.

With such a lack of uniformity in the use of antitoxin, it seems as if the medical profession should be informed, from authoritative sources, as to the most approved method of its use, its dangers through misuse, either in dosage or method of administration.

Particular stress should be laid, in the instruction of medical students, upon the necessity of properly administering antitoxin, thus avoiding the chances for anaphylactic reaction and impressing upon them the need of early and sufficient treatment.

Full realization of these facts can only lead to the conclusion that the progress toward eradication of diphtheria has fallen short of what reasonably might have been expected.

Clinical Department.

THROMBOSIS OF THE LATERAL SINUS.

By G. A. MOORE, M.D., PALMER, MASS.

REPORT of a case of extensive thrombosis of the lateral sinus and jugular vein, probable thrombosis of the cavernous sinus, perisinus abscess and anomaly of the lateral sinus in its sigmoid portion:

The recognition of sinus thrombosis, despite voluminous literature on its diagnosis, and one's personal experience, is sometimes very difficult. It is held by some writers that no reason exists why, in case of doubt, one should not uncover the sinus; but, in many instances, the question comes, not at the time of primary operation, when, indeed, it would add little if any, to the hazard to inspect the wall of the sinus, but at a subsequent time, when in an enfeebled patient the administration of an anesthetic is of itself formidable enough, not to mention an operation, that *a priori* cannot with certainty be called harmless.

The causes of sinus thrombosis have been enumerated by Adami¹ as 1, slowing of or stagnation of the blood; 2, eddying of blood (von Recklinghausen); 3, hemolysis; 4, bacteria and their products; 5, disease and injury of the vessel wall. Of these he regards the speed of the blood stream as important.

A. Braun² speaks of "the method of coming about" of thrombosis: 1, The inner table of the mastoid over the sinus may be diseased and an abscess form between the sinus and the inner table. This results in an inflammation of the outer sinus wall, which in turn leads to the formation of a thrombus within the sinus. 2, The inner table over the sinus may be diseased and cause an extension of the inflammatory process to the sinus wall without the intermediation of a perisinus abscess. The phlebitis results in a thrombus. 3, A thrombus may form in one of the smaller veins of the mastoid process and extend into the lateral sinus.

Among the signs and symptoms given by Pfingsten³ are: Pain and swelling, headache, nausea and vomiting, chills, temperature from normal to high fever, disturbance of vision; optic neuritis, oedema of the lids, nose and forehead, vagus, glosso-pharyngeal, spinal accessory, hypo-glossal disturbances.

H. B. Graham⁴ enumerates: Chilly sensations, chills, rapid rise and remission of temperature. "One chill is not enough to confirm a diagnosis; one should always wait for a second chill before operating where evidence is wanting otherwise to make a pretty positive diagnosis"; headache, vomiting, dizziness, choked disk.

J. H. Barnes⁵ makes a point of: Chill with temperature of 103 to 104 during chill and 105 to 106 after, followed by sweating and decline of temperature even to normal.

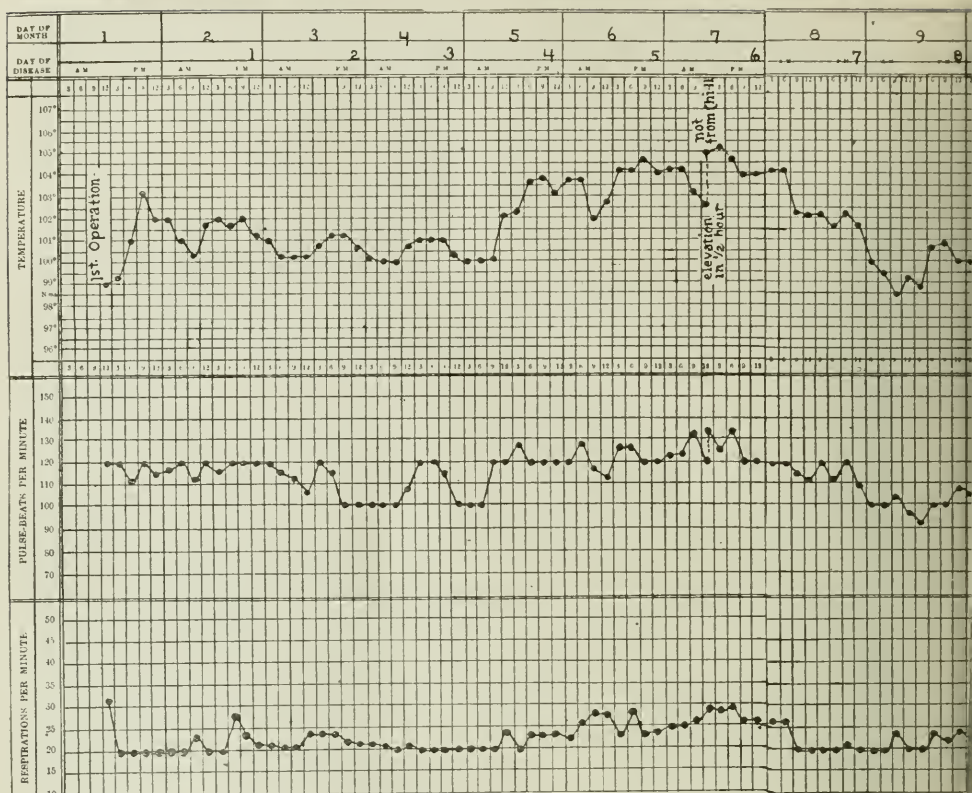
J. M. Smith⁶ says: Nature's warning of an extension of the infection is practically always a chill accompanied by a sudden rise of temperature; at this time (early) we have a possible erysipelas, pneumonia, meningitis, adenitis, or sinus thrombosis to consider. With a total white blood count of 30,000 or more, suspect pneumonia: 20,000, suspect meningitis or erysipelas: 10,000 to 12,000, sinus thrombosis. He considers total white count very important and that it is of quite different import to find a total of 10,000 when the temperature is normal than when it is 106. Blood cultures are negative if the vessel is completely blocked by the clot. Important point is that in sinus thrombosis the patient's mind remains clear; also there is usually an absence of headache or pain.

A. S. Kaufman⁷ in a report of five cases of sinus thrombosis says four were acute cases instead of the usual chronic. All showed atypical symptoms.

A. Braun⁸. A case of cavernous sinus thrombosis. Total whites, 36,400; polymorphs, 87%; large monos., 7%; small, 4%; trans., 2%. Eyelids oedematous and conjunctiva chemotic on same side; slight oedema opposite side; eye-grounds normal, pupils slightly dilated.

I. Friesner⁹. Report of case of cavernous thrombosis: Mastoid of pneumatic type, oedema of lids and conjunctiva, slight headache (one night), exophthalmos, vomiting (36 hours), polymorphonuclear, 80%; trans., 6%; total whites, 6,400; two days later, polymorphs, 86%; chills, fever to 106, disappearance of oedema.

J. G. Beck¹⁰ gives symptoms of intracranial extension: Headache, nausea, temperature rise small chills, Kernig's, Brudzinski's, Gordon's, Chaddock's, Oppenheim's signs, choked disk, increased spinal fluid pressure and changes in fluid. He remarks, "There are, doubtless, many cases of localized meningitis . . . in which



most of the cardinal symptoms are wanting"

G. G. Hall¹¹: Most pronounced symptoms of typical cases. Pronounced chill with sudden rise of temperature followed by prompt subsidence to or below normal, sweating, pulse and respiration according to temperature, choked disk in one-third of cases.

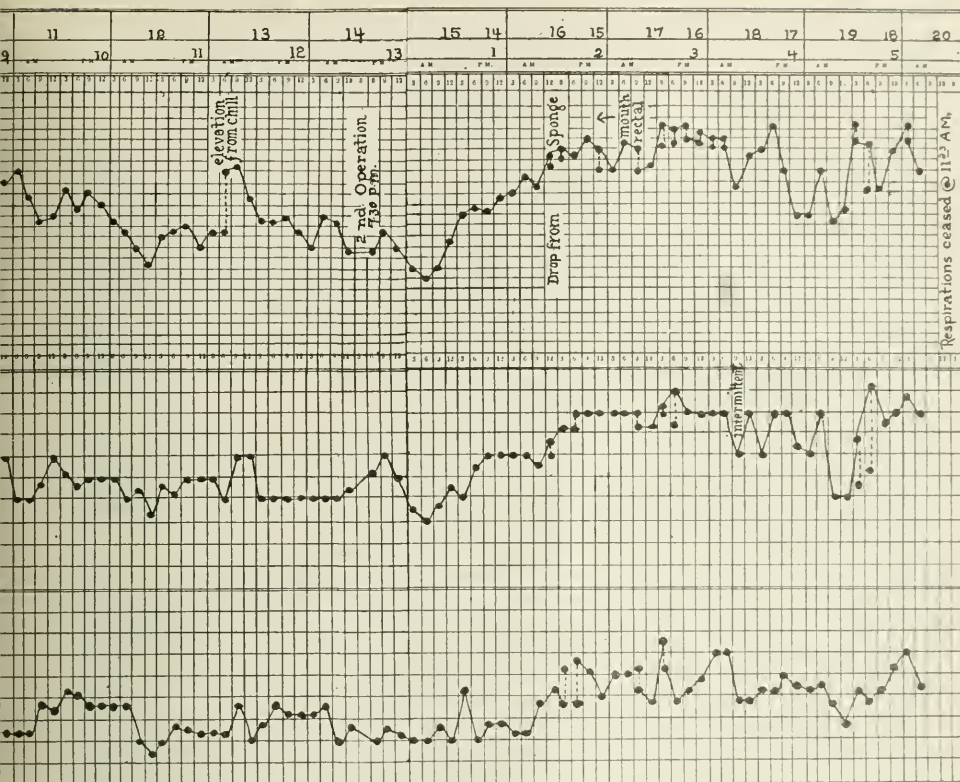
W. C. Phillips¹²: In a typical case the diagnosis is always difficult A high temperature continuing several days after mastoid operation, especially where the operative findings have disclosed areas of necrosis of the bony covering of the lateral sinus and examination of the blood shows bacteremia, leucocytosis and a high polymuclear count, is at least indicative of an infective process of sufficient severity to constitute sinus thrombosis and the sinus should be examined.

Boenninghaus¹³: When, after an acute ear and mastoid involvement, in spite of adequate

drainage (surgical treatment), the fever recurs after having dropped, then we should be suspicious of sinus thrombosis. Especially is this true if the temperature elevations persist over a number of days and become higher as the succeeding days pass.

These excerpts from a few writers show the general thought. In the case I am reporting the patient was an unmarried female of 36 years who never had been very well. She was of spare figure, anemic looking, the skull was of dolichocephalic type, auditory canal very small, in which the roof was sagging when first examined by me. Patient referred by Dr. Pearson of Ware because of acute mastoiditis.

Mastoid opened July 1, 1918. Pneumatic type; antrum, deeply situated, contained pus and detritus; infective agent, pneumococcus; sinus distant from posterior wall, destruction of bone very extensive, involving tip, zygomatic and posterior cells. These last extended an unusual



distance posteriorly and necessitated the severance of the mastoid emissary vein. The patient was returned to her room in splendid condition and in two hours was free from pain and nausea, and had a good night.

July 2nd. Patient felt well but the eye on the operated side (left) showed some redness, slight oedema of conjunctiva and a slight swelling of the lids; eyegrounds negative. Palpation revealed no unusual tenderness. The bandage was loosened a little, but the wound was not inspected.

July 3rd. No change in condition.

July 4th. Patient had been the same, but this morning the oedema of lids and conjunctiva on left was more pronounced and a slight oedema of the nose was manifest. Eyegrounds remained normal and the patient entirely comfortable. However, on account of the unusual eye condition the first dressing was done. All stitches were removed and a very close inspection

of every part of the wound, assisted by probe, was made. This search revealed nothing wrong. The wound looked in splendid condition.

July 5th. Patient a little restless, mentioned a slight headache and a suggestion of nausea. This was entirely relieved by calomel and saline.

July 6th. Complained of slight sore throat and during this day the temperature rose rapidly to a maximum of 104; pulse, 126; respiration, 24; the pulse and respiration, however, were not much variant from the day of admission. When awake the patient looked well, but when sleeping showed a peculiar change of color and looked "sick." She felt well, was bright, and on every dressing the wound looked good. The urine on this day decreased to 500 cc but was not pathologic. *Résumé of six days.* A patient who has felt well all the time and still feels well, not forgetting that on one day, there

was a little headache and nausea, which the patient said was scarcely worth mentioning, a slight feeling of sore throat and the oedema of eyelids and nose now disappeared. Eyegrounds normal, but a change in color when asleep and a marked rise in temperature.

July 7th. Patient says she feels well, but her neck is quite stiff, and swallowing is difficult. Left eye again shows oedema; abdominal reflexes slowed; Kernig and Babinski present. Patient felt chilly at times, temperature to 105. Permission sought to operate on sinus. Blood count showed total whites, 9,400; polys., 75.6%; large mono., 8.6%; small mono, 2.6%; trans., 9.2%; unidentified, 4%.

Later on this day, consultation with otologist from another city, when examination showed a clean wound with no suspicious area, no cells remaining to foster temperature. Kernig and Babinski present, abdominal reflexes active on left, almost ablated on right, oedema of lids and nose, eyegrounds normal. Consultant was not sympathetic to the idea of opening sinus because of the good appearance of patient and good feeling as well, clear mind, absence of pain or tenderness and of chills, no great leucocytosis, and a low polymorph. count for a grave infection.

July 8th. Patient much improved in appearance, appetite began to return, temperature subsiding.

July 9th. Patient further improved. Slept seven hours last night, awoke feeling well and hungry; temperature, 98.6; pulse, 100; respirations, 20. Eyegrounds normal, wound looked well at dressing, oedema of lids gone, urine output increased to 5xxxiii; but Kernig and Babinski present and hands feel a little numb.

July 10th. Same as yesterday, temperature remaining under 100 until at 4.20 in afternoon a chill occurred, which lasted 30 minutes. Temperature not elevated during chill but rose immediately after to 103.4. The left eye became half closed from oedema and the muscles around the mouth twitched.

July 11th. Temperature has remained higher than on 8th and 9th and at 6 p.m. occurred a short chill (10 minutes), during which temperature did not recede, and after rose to 104.2. Patient is weak.

July 13th. Symptoms not so severe today. Permission given to operate.

July 14th. Consultation with Dr. C. A. Frelich of New York City. Blood total, white, 9540; polys., 76%; large monos., 7.6%; small, 10.8%; trans., 2.8%; unidentified, 2.8%. Dr. Frelich concurred in the belief of sinus thrombosis, after thorough examination, and at about noon operation was performed. Sinus opened by Dr. Frelich, jugular resected by writer. Anatomic anomaly of the sinus was found, consisting of a branch which ran posteriorly and upward, from midway in the perpendicular part of the sigmoid portion. This branch was complete in every way, the bone was grooved, the size was the same diametrically and the walls of the branch differed in no way from those of the true sinus.

The branch came to a rounded, blunt termination and near this end, was given off the mastoid emissary vein. The foramen of this vessel while large, was not larger than others I have seen. The branch did not taper, being circumferentially the same in all parts.

The branch running backward and upward had above it, and between it and the knee of the sinus proper, a somewhat V shaped spine of bone which lifted out *en masse* while the rongeur was being used on the cortex at this locus, and revealed a perisinus abscess of considerable extent.

The sinus wall, in both the true sinus and the twig, was grey in color, firm to the touch, and free from granulations. At this point it was full of dense white (conglutination) thrombus and the branch contained the same.

The jugular was completely filled to within less than an inch of the innominate, with red (coagulation) thrombus. The portion between the end of the red thrombus and the innominate, was empty and slack and would, doubtless, have been collapsed but that it was held open by the nearby end of the thrombus.

In the skull, the clot extended to the torcular, but bleeding was finally established from this end. The anomaly of the sinus, the perisinus abscess and the extensive thrombus were the only notable features of the operation, the resection of the jugular presenting nothing unusual. Patient returned to room unshocked and in good condition.

July 15th. Patient comfortable. Temperature rose steadily to 103.2, and with this the patient spoke of feeling rather cold. Eyelids and conjunctiva oedematous. Eyegrounds nor-

mal. Some difficulty in swallowing. Transient pain in left forearm.

July 16th. Temperature rose steadily to 105.6, pulse and respiration in keeping. Temperature uninfluenced by sponging.

July 17th. Patient irrational, temperature, 106.4; pulse, 140 to uncountable; respirations, 32 to 44, with no change until death at 11.23 on July 18th.

The locus, of beginning formation of the thrombus, was, without doubt, in the anomalous branch and its junction with the sinus proper, for there the striations of platelet composition were most abundant, and grew less so the farther it was examined away from this point, until the character of the thrombus was changed to the red type.

It is interesting to return now to Adami's statement of causes: 1, Slowing, or stagnation of blood; 2, eddying of blood stream; 4, bacteria and their products; and to Braun's "method of coming about . . . and an abscess forms between the sinus and the inner table. This results in an inflammation of the outer sinus wall, which in turn leads to the formation of a thrombus within the sinus."

Certainly there was, in this case, a condition of stagnation of blood in the branch, and eddying of the blood stream at the point of juncture with the sinus proper. Bacteria and their products were manifestly present in the perisinus abscess. Whether the sinus wall would have been resistant enough to withstand the action of the perisinus abscess, had stagnation and eddying been absent, is rather a nice question.

There seems to be a plethora of reasons for the occurrence of thrombosis in this case. It is possible that the thrombus may have begun in the injured emissary vein and extended to the branch and sinus. A glance at the chart shows that the temperature did not touch the normal until the 11th day. Sometimes a considerable change of temperature occurred in so short a time as one-half hour, a notable example of this being shown on July 7th, when there was a change in one-half hour from 102.6 to 105, without chill. It is my practice in cases of this sort to take temperatures every hour, or hour and a half, as otherwise considerable fluctuations occurring between the three-hour periods escape our knowledge. Possibly, the sizable localized meningitis in this case made the temperature less typical of sinus thrombosis. One is likely to consider chill as anti-

thetic to fever, but in this case there occurred that feature mentioned by Barnes, namely, febrile temperature during chill (see chart, July 13).

Smith's classification of total white count significance receives some support in this case, and in many cases in past years I have found a consideration of total count valuable. In many cases of sinus thrombosis the condition (thrombosis) supervenes in cases whose blood reaction has passed through its highest expression of leucocytosis and high polymorpho. percentage in the prolonged initial infection of the ear and mastoid; I am speaking now of chronic cases. The blood picture, the temperature and the peculiar change in the color of the patient were important considerations in the earlier stages of the illness, in the present case. Blood cultures were persistently negative, previous to the second operation and none was taken there after. Perhaps the explanation is that given by Smith, the complete blocking of the vessel by the thrombus.

This case emphasizes the importance of early operation.

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American Medical Biographies.

FITZ, REGINALD HEBER (1843-1913).*

REGINALD HEBER FITZ, clinician, teacher and contributor to the art and science of medicine, was born at Chelsea, Mass., May 5, 1843. His father, Albert Fitz, was a consul of the National Government; his mother was Eliza R. Nye—both being of unmixed English stock.

He received his preliminary education in the Chauncy Hall School, Boston, graduated A.B. at Harvard in 1864, and M.D. in 1868, and received an LL.D. in 1895. During his last year

* From the forthcoming "American Medical Biography" by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

in medicine he was house surgeon in the Boston City Hospital. He then spent two years abroad with Rokitansky, Oppolzer, and Skoda in Vienna, and with Cornil in Paris; but the master spirit nearest akin to his own was Rudolph Virchow in Berlin, whose creation of a cellular pathology Fitz introduced to America, thus becoming our pioneer scientific pathologist. While in Berlin he wrote a paper on the changes in the cartilages of the bronchi in bronchiectasis in the fifty-first volume of Virchow's Archives.

On his return home in 1870 he settled down to practise in Boston, and at once entered upon his duties as a teacher, that extended through his whole life until his age retirement.

From 1870 to 1873 he was instructor in pathological anatomy in the Harvard Medical School, and from 1873 to 1878 he was assistant professor of pathology. In 1878 he was selected to succeed J. B. S. Jackson in the chair of pathological anatomy, the title being changed in 1879 to that of Shattuck Professor of Pathology. He retained this position until 1892, when he was succeeded by W. T. Councilman, and when he himself became Hersey Professor of the Theory and Practice of Physic in the Harvard Medical School. His pathological lectures, exponents of the new and quickening doctrine of the "cellular pathology," were thronged with interested students and were remarkable "in form and in substance, models of clear and precise exposition, admirably delivered in language, every faceted word of which seemed to have been chosen so that it and it alone could have filled the place." In 1887 he was made a visiting physician to the Massachusetts General Hospital.

Fitz entered upon his career as a teacher at the critical time when the faculty had just adopted a progressive course of instruction to cover a term of three full years, with examinations in writing, and with the resolution that no student should graduate without passing in every department. In the year in which he became an instructor, and before he became a member of the faculty, in 1871, the services of H. P. Bowditch were secured as assistant professor of physiology, and the faculty engaged to do its utmost to provide the latter with a laboratory. The same plans were entered upon in chemistry, and thus two definite policies were adopted of far-reaching significance for

the future of American scientific medicine,—namely, the teaching of the sciences upon which medicine depends by the laboratory method, and the employment as teachers of these sciences of men not harassed by the practice of medicine.

For twenty-eight years Fitz was on the important committee of courses of medical studies and for seventeen years guided its deliberations. His influence upon the development of scientific medicine in America in this way was, perhaps, more important than his two brilliant medical discoveries. That the Harvard School did much to inspire and help mould the Johns Hopkins course, I well know.

In taking up his general medical and consulting practice, Fitz had the rare advantage of a background of thorough training in pathology; in cultivating his diagnostic powers he had a habit of examining carefully the cases in the surgical ward before operation. Also he required that a clinical diagnosis should be made known before an autopsy.

In 1894 he was president of the American Medical Association, and in 1897 president of the Congress of American Physicians and Surgeons. In 1908 he retired from his chair as emeritus professor; he gave up his hospital position at the age limit of sixty-five years, and devoted himself for the remaining five years to private practice. On his sixty-fifth birthday his former pupils and assistants issued a volume in his honor entitled, "Medical Papers Dedicated to Reginald Fitz."

It was due to Fitz that Dr. Henry Francis Sears made his noble gift of the "Sears Pathological Laboratory" to the Harvard Medical School, the first laboratory in America used exclusively for the study and teaching of pathology.

Fitz's writings are sharp, critical and lucid. The titles to his papers number about thirty-eight. His best-known claims to fame are vested in two theses, "Appendicitis" and "Acute Pancreatitis."

The classical article on appendicitis was presented at the Association of American Physicians in 1886, with the title, "Perforating Inflammation of the Vermiform Appendix," and he gave here, for the first time, a clear picture of the clinical course and diagnostic signs of the disease, together with its pathologic changes, advocating a radical operation as the

immediate objective and the only rational means of saving life where there is not a prompt subsidence of threatening symptoms. His conclusions were firmly based upon some two hundred and fifty-seven cases of perforating ulcer, and two hundred and nine cases diagnosed as typhlitis and perityphlitis and perityphlitic abscess, in which the diagnosis was clinical only and not anatomical. The treatment recommended at the outset was opium, rest and liquid diet, and food in small quantities often repeated; but if general peritonitis seemed imminent at the end of twenty-four hours, the abdomen should be opened and the appendix removed.

In 1889 he analyzed a further series of seventy-two cases, occurring since 1886, and urged the interval operation. In this year he delivered another memorable address before the New York Pathological Society on "Acute Pancreatitis." He carefully distinguished the hemorrhagic, the suppurative and the gangrenous forms of acute pancreatitis. Since that time this disease, which was at first regarded as rare and curious, has come out into the light of day, and is now well known, and often diagnosed by all educated physicians and sometimes cured by operation. Here appears the earliest suggestion that fat necrosis is the result of a lesion of the pancreas, confirmed a year later by Langerhans.

In 1888 Fitz read a paper on "Intestinal Obstruction" before the first Congress of American Physicians and Surgeons, based on a critical study of two hundred and ninety-five selected cases; here again the conservative physician urges surgery.

In 1903 he again addressed the sixth Congress of American Physicians and Surgeons on pancreatic disease, and was elected president.

In 1875 he wrote on tubo-uterine or interstitial pregnancy (*American Journal Medical Science*, 1875). He wrote the article on diseases of the esophagus for the "Twentieth Century Practice," New York, 1896. The following year, in collaboration with H. C. Wood of Philadelphia, he published "Practice of Medicine."

Perhaps his last article is "Tests for Renal Function Based on the Secretive Excretory Activities of the Kidney" (*Boston Medical and Surgical Journal*, 1913, clxix, 384-386).

He prepared a large number of anatomical specimens to illustrate his lectures; these are

now in the Warren Museum, Harvard Medical School.

Dr. Fitz married Elizabeth Loring Clarke, daughter of Dr. Edward Hammond Clarke of Boston, and they had three children, a son, Reginald, following his father in the practice of medicine.

It seemed to be Fitz's mission to explore obscure medical territories and thus to enlarge the domain of his aggressive surgical confrères. As a lecturer he was always clear, comprehensive, logical and thorough. His diction was rapid and he always seemed to have more to say than could be crammed into an hour. The knife of logic in his hand, like that of steel in the hand of the surgeon, was guided solely by the intellect, as the unwary student often found. His critical faculty was very highly developed and fairness of mind was instinctive.

He died September 30, 1913, at Brookline, Massachusetts, after an operation for chronic gastric ulcer.

HOWARD A. KELLY, M.D.

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Book Reviews.

The Surgical Operations on President Cleveland in 1893. By W. W. KEEN, M.D. Philadelphia: George W. Jacobs & Co. 1917.

This book gives an account of the surgical operations performed upon President Cleveland by Dr. Joseph D. Bryant, assisted by the author, Dr. Keen. The operation was a triumph in both surgery and secrecy. Because of the grave financial situation which was threatening the nation at the time, it was essential to the nation's destiny that the knowledge of the President's critical condition should be kept from the newspapers and the public. For this end the operation was performed on the yacht *Oncida*.

The author gives a detailed account of the two operations performed on the President, who was suffering from cancer of the mouth. During the first operation, under nitrous oxide, the two left upper bicuspid teeth were extracted and necessary incisions were made in the roof of the mouth. Ether was then given to the patient and the entire left upper jaw, from the first bicuspid

tooth to just beyond the last molar was removed. The whole operation was done within the mouth, by means of a cheek retractor. A second operation was necessary for the removal of some suspicious tissue. In a little more than a month the President, pronounced "all healed," was able to hold a special session of Congress.

Shell Shock. By G. ELLIOTT SMITH, M.D., F.R.S., and T. H. PEAR, B.Sc. Manchester: University Press. 1917.

"Shell Shock" is a discussion of the nature and treatment of a form of mental disorder which the war has brought to our attention. It is not, however, a disturbance peculiar to war conditions alone, for every symptom may be found in civil life. The source of the trouble may usually be found in the emotional rather than in the intellectual sphere. Therapeutic measures which may be applied as a remedy include firmness and sympathy, relief from anxiety, sometimes isolation, suggestion or hypnotism, and often work. The patient's condition must be diagnosed by true insight, and restorative methods must be rationally applied. Psychological analysis is of great importance; for by means of it, a mental condition may be reduced to its essential elements by dissecting its normal, abnormal and unconscious factors. The author believes that the importance of attaining the patient's full confidence cannot be overestimated, although this instrument must be used with great care and discretion.

This book is an attempt to awaken the nation to the need of abandoning its ignorant and superstitious attitude toward insanity and of diminishing the social stigma of the "lunatic asylum." It is essential, above all, to realize the necessity of treating these cases in their early stages. The medical profession should adopt a more intelligent and interested attitude toward psychiatry and should encourage more research work and original investigation. The defects in our national system are many. Psychiatric clinics, special hospitals, and a close affiliation between these and medical schools are needed from every humanitarian and scientific standpoint. The war is teaching us many lessons; among them is the recognition of the need of extending psychiatry beyond asylums, and of applying to the civilian population after the war some of the methods of alleviating suffering which are now being successfully applied to victims of shell shock.

Text-Book of Nervous Diseases. By CHARLES L. DANA, A.M., M.D., LL.D. Eighth edition. New York: William Wood & Co. 1918.

This new edition of a standard book is very welcome. Dr. Dana's book has been one of the best known and most used books on nervous diseases since it was first published twenty-three

years ago. The changes are all to be commended and bring a new lease of life to this work. The chief of these are the condensation of the chapter on the anatomy of the nervous system, and the practical rewriting of the chapters on syphilis of the central nervous system, on poliomyelitis, epidemic cerebrospinal meningitis, and tumors of the brain and cord. The portion of the previous editions which treated of mental diseases has been omitted, but we are glad to see that the author intends to rewrite this part of the book as a separate work on psychiatry. This will be welcomed by all who are familiar with Dr. Dana's work. The final result of the revision of this book is to bring to us the results of recent advances in the field of nervous diseases in a volume which is at once authoritative, clear, and yet of more moderate size and price than any recent work on nervous diseases in the English language which is at all adequate. This book is to be especially commended to teachers for use in their classes where the students can not be expected to buy encyclopedic works, both on account of the expense and because of lack of knowledge in which direction their chief interests in medicine may lie at a future time.

Burns and their Treatment. By J. M. H. MACLEOD, M.A., M.D., F.R.C.P., Physician for Diseases of the Skin, Charing Cross Hospital, Royal Flying Corps Hospital. Henry Froude, Hodder and Stoughton. Oxford University Press.

This little book, Oxford War Primer, divided into eleven chapters, covers this subject in a very thorough manner, conforming largely to text-book style. The author classifies burns into those due to heat and those due to electricity, lightning, x-ray, radium, the sun, corrosives, and from high explosives. About half of the book is devoted to the description and treatment of burns due to heat. He follows Dupuytren's classification of six degrees, which is rarely used in this country. The book contains ninety illustrations which on the whole are not particularly good. The work is almost entirely clinical and the descriptions of the pathology brief. Much less attention is paid to the modern paraffin treatment than would be expected at the present time.

The chapter on burns from electricity is one of the very best that the reader has seen published. It is clear and concise and full of accurate description. A short chapter on burns from lightning is also valuable. X-ray burns are treated in some detail, but the account of radium burns is very brief and not very illuminating as to the character of the lesions. Dermatitis from high explosives receives much deserved attention and is well described. This little book has many points of value and should form a very handy reference book for practical use.

Handbook of Operative Surgery. By WILLIAM IRELAND DE C. WHEELER, (Mod.) B.A., M.D. (Dub. Univ.), F.R.C.S.I., Lieut.-Col. R.A.M.C., Surgeon to Mercer's Hospital, Member of Council, Royal College of Surgeons, Ireland; Surgeon to the Military Orthopedic Centre, Blackrock; and Hon. Surgeon to the Forces of Ireland. With an introduction by SURGEON-GENERAL SIR ALFRED KEOGH, G.C.B. Third Edition. New York: William Wood & Company. 1918.

This is a small book of 350 pages which has been brought up to date "in the hope that it may be of some assistance to students who are rushing from the medical schools into the service of the army and navy."

"An attempt is made in the present edition to provide an introduction to the type of operation which may confront the inexperienced practitioner in the military and civil hospitals at home. Thus one-third of the book is occupied with descriptions of the ligature of arteries and the various forms of amputations."

The book is clearly printed, well illustrated, and certainly concise. It remains open to question, however, whether it is to be considered better than other English textbooks, such as Treves, with which we are already familiar. In a book of this size certain procedures must be so briefly described as to raise the question whether such outlines are adequate for the inexperienced operator. With this slight qualification, the book is recommended, though not to the exclusion of the older volumes.

The Medical Bulletin. A Review of War Medicine, Surgery, and Hygiene. Published by the American Red Cross Society in France, 6 Rue Piccini, Paris: November, 1917.

The commissioners of the Red Cross in France believe that it is their duty to endeavor to assist in the scientific research work of the medical men caring for the American troops, that by such aid the troops may receive more quickly the benefit of increased medical and surgical knowledge, both in the prevention of disease and its treatment. A Research Committee has been appointed by the Commissioner of the American Red Cross in Europe, and under the supervision of this committee the research activities of the Red Cross are to be carried on. A research laboratory has been established in Paris where leading scientific workers are engaged. To disseminate the knowledge there gained, the Red Cross proposes to encourage periodic meetings of the investigators, and to make available the reports of the latest methods of treatment for war

injuries and diseases by means of publication. The Medical Bulletin is issued for this purpose; it contains abstracts of papers read at the monthly meetings of the men engaged in scientific research, and also articles appearing in the French, English, and American journals. The Bulletin appears monthly, and should be most valuable to physicians and surgeons with the American Army in France. The first number of the Bulletin contains articles on such subjects as: "Surgery of War: Conclusions Adopted by the Interallied Surgical Conference," "A Convenient Method of Preparing Eusol," "Flavine and Brilliant Green," "The Reparation of Cranial Defects by Means of Cartilaginous Grafts," "Treatment of Wounds Infected with *Bacillus Pyocyaneus*." In the Radiological division of the Bulletin is an article on "Simplified X-ray Methods." Under Medical, there is an article on "Infective Jaundice" and another on "Trench Nephritis"; under Bacteriological and Pathological, an article on "Spirochetes occurring in the Urine of Cases of Pyrexia of Unknown Origin"; under Nervous and Mental there are articles on War Neurosis and Shell Shock; under Skin and Genito-Urinary are treated recent investigations in regard to venereal diseases and scabies.

First Lessons in Spoken French for Doctors and Nurses. By ERNEST H. WILKINS, ALGERNON COLEMAN, and ETHEL PRESTON. Chicago: University of Chicago Press. 1917. Third Edition.

This small text-book, now in its third edition, is issued to help American doctors and nurses to understand what may be said to them in French, to make themselves understood in French, and to understand printed French. The facts and words of French are presented consistently in terms of sound, just as they will present themselves in France. French spelling is not studied until the latter part of the course is reached. For the representation of French sounds, a very simple set of phonetic symbols is used, corresponding very closely to that used in Grandgent's Short French Grammar. The book is not intended to take the place of a grammar, and it is recommended that the student supplement his study of this book with the use of a simple French Grammar. This book is of especial value to the doctor or nurse who expects soon to go to France, as vocabularies and a large part of the exercises are composed with reference to the particular needs of those employed in hospitals. Royalties from this book will be devoted to the Red Cross.

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RECENT MEDICAL PROGRESS.

WITH the advent of peace and the New Year, it is fitting to review the achievement of medical science during the last few years. Out of the great war the doctor and the surgeon emerge with but little of the glamour of the conflict, but with a multitude of marvellous performances, each of epic proportions, to their credit. Modern medical methods have been splendidly verified and vindicated. It is said upon excellent authority that the total death rate, both military and civil, during the last three years is very little higher than what would have been considered an average one in the civilized countries of Europe sixty or seventy years ago.

In the writings of several members of the profession, various phases of the situation are summarized. Dr. W. W. Keen, in the *Yale Review*, contrasts the prevalence of typhoid fever in 1898 with its status today.

Typhoid has been one of the historic foes of armies. In the Spanish-American War every fifth man in our army of 107,000 was attacked with it. It caused more than 86 per cent. of all our deaths. Had the ratio held in the British army of more than 5,000,000 in the World War there would have been more than a million cases of typhoid; actually down to November, 1916, there have been only 4,571. Had the old ratio persisted in our own Army between September and February last we should have had 144,568 cases; we had only 119. And in the seventeen weeks ending April 4 last, a longer period than our war with Spain, we had only ten cases, among almost a million men. Dr. Keen traces this result to preventive vaccination by methods perfected, since the Boer War, by Col. F. F. Russell of the American Army.

"The Doctor in War," by Dr. Woods Hutchinson, shows the medical progress made in this the most terrible war the world has ever known. The author points out that the average death rate of the first three great wars of the nineteenth century, the Napoleonic, the Mexican, and the Crimean, was 12.5 per cent. per year; of the last three wars of that century, the Spanish-American, the Boer, and the Russo-Japanese, it was 4.8 per cent.; of the present war, but 3 per cent. The modern soldier's chances of being killed in battle in a year's campaign is estimated to have been reduced to about one in thirty, of dying from wounds received in battle to about one in sixty, and of dying from disease to less than one in a hundred. Yet Marlborough's surgeon in the famous Blenheim campaign declared that hospitals were the most important cause of death, and in the war between Russia and Turkey in 1828, out of an army of 115,000 Russians who crossed the border not more than 15,000 ever returned home after serving in only two campaigns. Wellington, in the Peninsular campaigns, gave the first clear instance of a really effective medical service, crude as it was, and an historian declares that "the work of the army surgeons practically decided the result of the crucial battle by adding a full division to the strength of the English Army." Just about a century later the Japanese deliberately calculated that they could neutralize Russia's superior numbers by keeping 50 per cent. fewer men in the hospital.

So complete has become the doctor's control over wound infections that of the wounded who

survive six hours 90 per cent. now recover, of those who reach the field hospital 95 per cent., and of those who arrive at the base hospital 98 per cent.

In the Civil War, blood poisoning, hospital gangrene, erysipelas, and tetanus killed from 75 to 90 per cent. of the patients attacked by them. The very first thing given a wounded soldier today by the surgeon, before food or dressing for his hurts, is an injection of anti-toxin against tetanus. When the World War started, tetanus at once became common because of the small supply of anti-toxin available; the supply was increased, and by 1915 a case of tetanus was a great rarity.

Although the armies in Flanders and France have been in open trenches in winter weather, they have had less sickness and fewer deaths from pneumonia and all other diseases than they used to have in barracks in time of peace and far less than the general civil population at home. Inoculation protected them against typhoid, splendid feeding with plenty of meat and fat against pneumonia and consumption, fly campaigns against dysentery, shower baths and clean underwear against spotted typhus. Only three new diseases have appeared during the war: trench fever, trench nephritis, and trench feet, unless "Spanish" influenza is to be counted as new also. The fields of France and Belgium are saturated with bacteria to a degree surgery had never known. The soldier and his clothes became begrimed. A shell, striking, carried a bit of clothing of its own shape and size into the wound and with it multitudes of death-dealing bacteria; but his chances of recovery have been good if he has reached the surgeon early enough. Figures show that battles today are one of the least of the perils of war. In Napoleon's Peninsular campaign, however, of 460,000 lost, only 60,000 fell in battle. In the Thirty Years' War the population of Central Europe was reduced from 30,000,200 to 13,000,000; yet only fifty important battles were fought. In all probability, Napoleon's defeat in his last Russian campaign was due, not to snow and ice, but to spotted typhus.

Only as late as the time of Louis XIV. did hospitals come to be considered as an essential part of an army's equipment. Only sixty years ago, hospitals were held in apprehension by vast numbers of persons. The Japanese were the first openly to adopt the rule that the doctor's

place is in the first line with the scouts, and to give the surgeon real power, with control of sanitation. In praising our fighting men, let us not forget, also, the splendor of the achievements of science in these recent years. Four fifths of war's slaughter has been due to disease, and nine-tenths of that disease is preventable. Medical science is preventing it. That from 90 to 95 per cent. of the wounded recover is a victory for antiseptic surgery.

FOOD VALUE OF SACCHARIN.

In a recent number of *Science* there appears an article by W. E. Burge of the Physiological Laboratory of the University of Illinois, on the substitution of saccharin for sugar. Much has been said during the past few years about food substitutes and there were many people who thought that the substitution of saccharin for sugar would prove of harmful effect. However, it has been pointed out by investigators that the amount of saccharin ordinarily used has not a bad effect. As a sweetener, it is five hundred times sweeter than sugar; but sweetening is only one function of sugar as a food. To be oxidized and thereby to furnish energy and to increase oxidation in the body are the two other functions. The second function was found to be lacking in saccharin, and this present investigation was conducted to ascertain whether the ingestion of saccharin increases oxidation in the body. Dogs were used as subjects of experiment and the results of the introduction by means of a stomach tube of dextrose and of "soluble saccharin" (prepared by the addition of a solution of sodium carbonate to the saccharin) were carefully compared. It had previously been found that the ingestion of sugar produced an increase in catalase and that catalase is the enzyme in the body principally responsible for oxidation. Therefore the present investigation had for its purpose the determination of the question whether saccharin would produce an increase in catalase, and thus an increase in oxidation in the body. It was found from data obtained after careful observation that saccharin produced a much more extensive increase in catalase than sugar did. Hence the conclusion was drawn that, as a sweetening agent, though not oxidized itself, saccharin facilitates the oxidation of other food materials by stimu-

lating the liver to an increased output of catalase and, contrary to the supposed harmful effects, it is really helpful in the ordinary diet, and especially so in diseases which are a result of defective oxidation.

FRENCH MEDICINE IN THE PAST CENTURY.

RECENTLY there has been delivered at University College, London, a series of three lectures by M. Henri L. Joly, *professeur des sciences physiques et naturelles au Lycée Français*. On November 5 the subject chosen was "France's Share in Biology and Medical Science," and at the conclusion of this final lecture, M. Joly referred to the cordiality which has existed throughout the greater part of the last three centuries, except during the Napoleonic wars, between the French and British scientists.

In a brief outline of the work of Frenchmen of greater or less distinction among the natural scientists, he recalled the names of de Tournefort, Duhamel de Moreau, Buffon, and Gaudry. Lamarck he named as the founder of modern biology in France, Xavier Bichat as a pioneer in histology, and he declared Cuvier to be the greatest of French comparative anatomists. Van Tieghem, the botanist; J. H. Fabre, who popularized natural history in France; Armand Sébatier, and Lecoq were each referred to in covering the achievements of the period. The work of Pasteur having been covered in a previous lecture, M. Joly passed from Mondeville and Guy de Chauliac to the seventeenth century medical scientists, and noted briefly the work of Pecquet on the thoracic duct; of Paris on ergotism; Denys, who in 1667 performed transfusion of blood; Descartes, who did some useful work on visual accommodation, and LaVoisier, who contributed to the chemistry of respiration. He next spoke of Laënnec; of Magendie, the first experimental pharmacologist; of Le Gallois' work on the vagus nerve; of Flourens and his experiments in the use of chloroform on animals; of Claude Bernard and his pupil, Paul Bert, who organized the teaching of natural science in France; of Duchenne, who originated electrotherapy; of Broca, Charcot, Achard, Dastre, and of Carrel. Though little more than a brief sketch of the subjects was possible, the lectures served as an

interesting review of France's share in the progress of science in the past few hundred years.

WORK FOR THE ROCKEFELLER FOUNDATION.

In a recent address, Dr. George E. Vincent, president of the Rockefeller Foundation, outlined briefly the work of the Foundation and its plans for the future. He explained the tuberculosis campaign which is being undertaken in France. Although it is still too early to state what progress has been made, recent reports tend to show that the disease will be materially abated. In China, a medical university is being erected in Peking at a cost of \$6,000,000 by the medical board of China, which is working in coöperation with the Rockefeller Foundation. Another university will probably be built in Shanghai.

Speaking of conditions in this country and in the tropical regions, Dr. Vincent is reported to have said in part:

"The Foundation has spent \$21,000,000 on war relief work during the last four years, but will now devote its energies to human life. The international health board, which is dealing with the yellow fever and malaria situation in the tropical regions, is rapidly wiping out these maladies. The board is also fighting the hookworm disease which affects our southern states. It was recently found that 32 per cent. of one southern regiment were suffering from the ailment, while 54 per cent. of another regiment were similarly afflicted. By coöperating with the governments of the states the international health board has met with great success."

Dr. Vincent declared that a department of education and a department of health should be represented in the cabinet at Washington to safeguard the public against epidemics. He expressed the hope that, in future, science will be turned, not to destruction, but to healing mankind.

MEDICAL NOTES.

7,468 SICK AND WOUNDED REACH UNITED STATES.—During the week ending December 20 wounded and sick soldiers numbering 7,468

were landed in the United States from the American Expeditionary Forces. The Surgeon-General's report shows that 5,282 were landed at New York and 1,640 at Newport News.

EXCELLENT HEALTH OF TROOPS ON RHINE.—The percentage of sickness among the occupying American troops is unusually low, according to the estimates of the third army medical officers. The number of cases in the eight evacuation hospitals within the evacuated area is about 4,000, most of them being influenza.

Figuring the approximate number of occupying troops as 300,000, the sickness amounts to less than $1\frac{1}{2}$ per cent. In peace time the sickness among soldiers averages from 2 to 3 per cent.

The excellent condition of the men is due partly to good billets. There is just enough drilling to keep the soldiers in condition, and there is no overcrowding or illness from fatigue or exposure.

The third army has five hospitals in Coblenz and two at Treves and one at Mayence. Most of these are former German hospitals, and the equipment is modern in every detail.

LITTLE INFLUENZA IN ARMY CAMPS.—Influenza is definitely on the decline in army camps. A detailed report of the health condition of troops in the United States on December 28 showed that in several of the large camps there was not a single case for the week ending December 20.

INFLUENZA IN GUATEMALA.—A report from San Salvador indicates that influenza is prevalent in Guatemala. The sanitary arrangements for the cities have been taken over by doctors from the United States.

NEW YORK'S METHODS OF COMBATING INFLUENZA.—New York's list of influenza casualties has been far below that of other cities in proportion to its population. Dr. Royal S. Copeland, health commissioner, has issued several orders which have been effective in checking the spread of influenza. Windows of all street cars remain open throughout all hours of travel, and electric fans are kept in motion in all subway stations and in cars. Nurses and women who have had elementary courses in nursing were mobilized and held ready for emergency calls. Theatres were relegated to a zone system and

their hours of opening fixed by the health commissioner, and a relay system of travel was put into effect.

It is believed by health authorities that the welcome given the returning fleet may cause a large increase in the number of influenza and pneumonia cases. On December 27, physicians reported 269 new cases, an increase of 76 over the previous day's figures. Deaths totalled 36, an increase of 15. Seventy-seven new cases of pneumonia and 66 deaths were reported.

ONE-SEVENTH OF POPULATION DEAD FROM INFLUENZA IN TAHITI.—A report from Papeete, Tahiti, gives an account of the tragic condition of the natives. Fully one-seventh of the population of Papeete have died from influenza; the elder generation has been practically wiped out by the disease. The natives are able to obtain little medicine and attention, although Europeans and Americans who escaped the disease, have done what they could to alleviate the suffering. The beginning of the epidemic has been traced to the arrival of a steamer there on November 17 with many cases of influenza on board. The infection has now spread to the island of Moorea, where there are no doctors. The deaths in Papeete have become so numerous that burial is impossible, and it has been found necessary to resort to the pyre.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending December 28, 1918, the number of deaths reported was 441 against 257 last year, with a rate of 29.32 against 17.35 last year. There were 57 deaths under one year of age against 37 last year.

The number of cases of principal reportable diseases were: Diphtheria, 40; scarlet fever, 12; measles, 8; whooping cough, 11; typhoid fever, 1; tuberculosis, 28.

Included in the above were the following cases of non-residents: Diphtheria, 2; tuberculosis, 3.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever, 1; whooping cough, 1; tuberculosis, 21.

Included in the above were the following non-residents: Tuberculosis, 19.

Influenza cases, 2,363.

Influenza deaths, 163, of which 23 were non-residents.

\$26,000 BEQUEATHED TO VARIOUS CHARITIES.

—By the will of Joseph F. Noera of Cambridge, \$26,000 has been bequeathed to various charities, including \$2,000 each to the American Red Cross, to the Italian Red Cross, to the Holy Ghost Hospital, and to the Perkins Institution for the Blind.

CANCER PREVENTION IN MASSACHUSETTS.—The following interview with Dr. Reynolds, relative to a preventive campaign against cancer, is sent for publication by the Massachusetts Health Committee:

That a campaign of paid advertising and preventive education against cancer, such as was employed in the influenza epidemic, would result in saving annually many thousands of Massachusetts citizens over 40 years of age from intense suffering and untimely death, is the opinion of Dr. Edward Reynolds of Boston, Chairman of Directors of the American Society for the Control of Cancer.

"Of civilized people over 40 years of age," says Dr. Reynolds, "one man in every 14 dies of cancer and one woman in every eight.

"Cancer attacks more men and women over 40 than does tuberculosis, pneumonia, typhoid fever or any chronic disease. About 80,000 deaths annually in the United States are due to cancer.

"The majority of cases of cancer in the early stages are curable by surgery. The bulk of all cancers are in positions that permit of successful operation.

"After 40, it is highly unsafe to neglect persistent ulcerations, cracks in the skin, sores, lumps in the breast or chronic indigestion with loss of weight and change of color.

"Birthmarks, moles or warts which change their appearance or show signs of irritation should be regarded with suspicion and should be examined by a competent surgeon.

"Medicine is worse than useless. By producing a period of freedom from discomfort it delays the proper treatment. Medical cancer cures are all bogus. Barring the use of radium or similar means for small affairs of the skin, surgical operation is the only cure for cancer.

"In the earliest stages of the 'precancerous' conditions, the operation for cancer of the breast usually requires an incision only an inch or two long, necessitates carrying an arm in a sling for a few days, brings about only a trifling expense and causes no deformity."

INFLUENZA SITUATION IN BOSTON AND MASSACHUSETTS.

—After consultation with Dr. Eugene R. Kelley, State health commissioner, Governor McCall recalled the order by which he directed the State Emergency Health Board to reassemble because of the recurrence of the influenza. Dr. Kelley convinced the Governor that the regular health staff has the situation well under control. The organization remains intact, and has retained the lists of nurses that were employed by it in the emergency of the summer.

Dr. John S. Hitchcock, in charge of the influenza branch of the department's work,

has reported that the department has provided about 1,000 nurses and volunteers for community work. He believes that although many serious cases are reported, the influenza situation is not, and will not be, so serious as the epidemic during the summer.

The reports to the department on December 22 showed 1,577 new cases and 22 deaths for a 24-hour period. Boston returned 145 cases and 11 deaths; Cambridge, 47 cases; Gloucester, 37; Lynn, 45; Somerville, 52; Waltham, 35; Fitchburg, 41; Springfield, 80 cases and 5 deaths; Northampton, 19 cases and three deaths; Holyoke, 15 cases; Westfield, 27; Worcester, 14.

On December 23, 423 cases of influenza and pneumonia with 55 deaths were reported to the Health Department of Boston for a 48-hour period. Health Commissioner William C. Woodward believes that there are many more cases among the civil population which have not been reported. Christmas shopping is held partly responsible for the increased number of cases.

The report for the 24 hours ending at 9 A.M., on December 25, showed 361 new cases of influenza and 11 of pneumonia. The deaths amounted to 20, 6 of which were due to pneumonia.

What health officials hope may prove the crest of the recurrent influenza-pneumonia wave was attained in the 48 hours ending at 9 A.M., December 26, when a total of 778 new cases and 40 deaths were reported in the civil population of Boston. The reports of the State Department of Health show that 70 cities and towns report 1,707 new cases and 34 deaths. Eleven of these communities, however, covered periods of from two to six days.

Deaths were reported as follows: New Bedford, 4; Foxboro, 2; Northampton, 2 (two days).

New cases were reported as follows: Fall River, 71; New Bedford, 44; Plymouth, 43 (six days); Brockton, 64; Brookline, 57; Cambridge, 63; Foxboro, 35; North Attleboro, 20; Quincy, 67; Beverly, 32; Lynn, 117; Lowell, 24; Medford, 45; Somerville, 99; Waltham, 73; Winchester, 40; Worcester, 62 (two days).

Health Commissioner Woodward, while he considers that many of the cases reported may be merely common colds with only slight indications of influenza, is of the opinion that from 600 to 1,000 persons are attacked by influenza

and pneumonia daily in Boston. He believes physicians are still negligent in reporting cases and it is only the slight proportion of fatalities that deters the health department from taking drastic measures.

In the vicinity of Boston local boards of health feel little or no alarm about the situation, the malady being less severe than in the former epidemic, and the death rate much lower. There seem to be few calls for nurses, and local doctors are reported generally to be able to handle the cases.

Forty-eight deaths from influenza-pneumonia, the largest number in Massachusetts since the recurrence of the epidemic, were reported to the state health authorities on December 27. Of these deaths, 23 were reported from Boston. The total of new cases reported was 2,744, of which 454 developed in Boston. Springfield reported 10 deaths; Winchendon, 4; Charlton, 4; Attleboro, 3; New Bedford, 2; Easthampton, 1; Northampton, 1. Of other new cases, 130 are in Somerville, 121 in Lowell, 103 in Cambridge, 97 in Haverhill, 93 in Lynn, 90 in Malden, 74 in Easthampton, 71 in Worcester, 65 in Quincy, 64 in Brookline, 63 in Fall River, 62 in Charlton, 59 in Brockton, 58 in Fitchburg, 56 in Chelsea, 53 in Everett, 52 in Springfield, 52 in Attleboro, 35 in Winchendon, 32 in Belmont, 31 in Danvers, 31 in Northampton, 30 in Hingham, and 27 in Norwood.

Dr. W. C. Woodward, Boston Health Commissioner, is considering the advisability of making obligatory the wearing of masks by doctors and nurses attending influenza patients, and also extending such obligations to dentists and barbers when at work, since the disease may be conveyed easily by a person afflicted even in the incipient stages, if he breathes in the face of others. Legislative action may be required, however, for any such regulation.

Dr. John S. Hitchcock, director of the State Health Department's Bureau of Communicable Diseases, stated recently that the number of new cases throughout the State should cause no unnecessary alarm, pointing out that the percentage of deaths is small compared with the recent epidemic. Many cases of colds have been incorrectly reported as influenza. The following reports have been received recently by the health department:

Attleboro, 11; Barnstable, 43; Mattapoisett, 35 (seven days); Middleboro, 22; Provincetown, 13; Wareham, 20; Yarmouth, 19; Brain-

tree, 35; Brockton, 12; Brookline, 23; Franklin, 16; Medfield, 75; North Attleboro, 30; Rockland, 18; Chelsea, 25; Everett, 21; Haverhill, 27; Lynn, 34; Malden, 39; Melrose, 15; Swampscott, 18; Arlington, 10; Lowell, 11; Saxonville, 24; Waltham, 23; Watertown, 17; Natick, 23; Southbridge, 20; Westboro, 15; Worcester, 41; Fitchburg, 19; Leominster, 36; Templeton, 25; Townsend, 18; Deerfield, 29; and Westfield, 12.

NEW SERUM FOR INFLUENZA REPORTED.—It has been reported that Dr. Bernard B. Carey, State epidemiologist, has stated that a new serum has been discovered which has been tried with some success at the Chelsea Naval Hospital. The serum has been developed from the blood of persons who have recovered from influenza and is injected by a special apparatus somewhat like a hypodermic needle. Several injections have usually been necessary for any noticeable improvement in patients. Dr. Carey believes that the results obtained by the use of this new serum are encouraging, although it is recognized as still in the experimental stage.

Dr. William C. Woodward has issued an appeal to persons who have recovered from influenza to give their blood to persons ill with pneumonia growing out of influenza. He is reported to have said:

"The life of a patient critically ill with pneumonia may depend upon whether or not some patient who has recovered from that disease, is willing to sacrifice a little of his blood to save the patient. When the crisis occurs no time is available for hunting around to find some recovered patient who is willing to aid, and for that reason the health commissioner asks that recovered patients who will, if necessity arises, give some of their blood to save their fellow-men, women and children, register their names and addresses at the health department now.

"As fast as names are registered they will be brought to the attention of the proper hospital authorities, and investigations can be made to determine the fitness of the person who offers his blood, for such blood, to be of value, must come from a person who is in good health now, but who has recently recovered from influenza-pneumonia.

"The serum from the blood of recovered patients is not looked upon as having any preventive value against influenza, and it can hardly be said to have demonstrated beyond a doubt

its curative value. Still, available evidence points very strongly to the presence in such blood of some substance or substances having a curative value, and at least in severe cases its use, under proper conditions, would seem to be fully justified."

The report of influenza-pneumonia cases in Boston for December 29 includes 259 new influenza cases and 31 deaths from this cause, with nine new cases of lobar pneumonia and nine death from this disease. On December 30, 624 cases and 21 deaths from influenza were reported, with 10 new pneumonia cases and 16 deaths from this disease. It is believed that this increase in the total number of cases is due to the fact that physicians have been negligent in reporting cases, and it is probable that at least 300 of the 624 cases are from two to five days old.

Increasing realization of the seriousness of the situation resulting from the recurrence of the epidemic was made evident recently to congregations in many of the churches in Greater Boston, when clergymen warned of the danger and advised that crowds be avoided, the body be warmly clothed, and sufficient sleep obtained.

Dr William C. Woodward, Boston Health Commissioner, reiterated his request that physicians impress on the public the necessity of exercising precautions such as were taken during the previous similar epidemic.

He has under consideration several drastic measures, among them being the compelling of all physicians, nurses, dentists and barbers to wear gauze masks, and it is probable that he will have perfected arrangements within a day or two to put this measure into operation.

Figures reported to the State Department of Health for the 24-hour period ending December 30, include 1,927 new cases of influenza. Reports were received from 64 communities. Natick reported 2 deaths; Springfield, 4; Deerfield, 1; and Northampton, 1. The following new cases have been reported: Attleboro, 34; Fall River, 47; Falmouth, 21; Mattapoisett, 6; New Bedford, 36; Norton, 14; Plymouth, 47; Braintree, 44; Brockton, 26; Brookline, 36; Cambridge, 112; Hingham, 10; Norwood, 32; Rockland, 32; Danvers, 20; Gloucester, 34; Haverhill, 33; Lynn, 52; Malden, 44; Marblehead, 26; Melrose, 15; Swampscott, 15; Arlington, 32; Belmont, 21; Lawrence, 20; Lexington, 37; Lowell, 38; Somerville, 42; Waltham, 110; (two days); Framingham, 14 (two days); New-

ton, 24; Wellesley, 14; Worcester, 76 (five days); Ayer, 5; Northampton, 32; Springfield, 36.

Thirty-seven cases of influenza have been reported to the Board of Health in North Adams during the past three weeks. Local authorities stated that not a single death has resulted from the disease.

In Brookline, by order of the Board of Health, the schools, gymnasiums, baths, and recreation centers will be closed until January 6.

In Norton, the number of cases of influenza is increasing. Forty cases were reported in December 29.

The schools in Dedham were opened January 2, as several new cases have been reported to health authorities.

In Somerville, the schools were reopened January 6. There have been 187 cases reported within the last four days. It is possible that a temporary contagious hospital will be opened.

NEW ENGLAND NOTES.

INFLUENZA IN MAINE.—In Bath, Maine, churches, theatres, and all places of public gatherings have been ordered closed indefinitely in order to prevent the spread of influenza. There are 200 cases of influenza and several of pneumonia.

Owing to the spread of influenza in Lewiston, Maine, the opening of schools will be postponed. Bates College will not be reopened until January 14. The actual situation is not known, as complete statistics are not kept by the health board. Thirty-five new cases were reported in Auburn on December 27.

INFLUENZA ON BLOCK ISLAND.—A report from Newport, R. I., states that influenza is spreading on Block Island. There are many cases among the civilian population and two among enlisted men at the naval base. The civil authorities sent an urgent message for nurses to the Newport Chapter of the American Red Cross, and two volunteer nurses were sent immediately to the Island on Christmas night. Three additional nurses were taken to the Island on December 26.

In Providence, R. I., an order has been issued by the State Board of Health requiring physicians to make reports to local health authorities of all cases of influenza.

Influenza is prevalent among the crews at the coast guard stations at Narragansett Pier and Fisher's Island.

Obituary.

JAMES MARSH JACKSON, M.D.

DR. JAMES MARSH JACKSON, a noted physician of Boston, who, in past summer seasons, had an extensive practice at the North Shore, making his summer home at Beverly Farms, died December 27, 1918, at his Boston residence. He had been in failing health for some time.

James Marsh Jackson was born in Roxbury on April 12, 1864, and was the son of William F. Jackson and Abbie (West) Jackson. He prepared for college at the Roxbury Latin School and was graduated from Harvard College in 1887 and from the Harvard Medical School in 1891. He received from Norwich University, in 1892, a Ph.D. degree.

He served as house officer at the Massachusetts General and Boston Lying-in hospitals, and then spent two years in post-graduate study abroad. Upon his return he practised medicine in Boston during the winter and at Beverly Farms and thereabout in the summer months. He was for 20 years a member of the visiting medical staff of the Massachusetts General Hospital and was extremely active in private practice, devoting himself to his patients with little regard for his own condition, up to, 1915, when ill health compelled him to limit his work and, finally, to relinquish it entirely.

Dr. Jackson was a member of numerous medical societies, among them the American Medical Association, the Massachusetts Medical Society and "The Doctors," a medical social club composed almost wholly of his college classmates. He was a member also of the Somerset Club, the Harvard Club, and formerly of the University Club of Boston. On May 15, 1885, he married Leonora Lewis of New York, by whom he is survived, together with his daughter, Elinor.

Miscellany.

RETIREMENT OF DR. DUDLEY.

The faculty of the Medical School of the Northwestern University, Evanston, Ill., gave a dinner at the Hotel La Salle, Chicago, on December 12, in honor of Prof. Emilios C. Dudley, who is retiring from the chair of gynecology, after 37 years of work: Many colleagues and friends of Dr. Dudley were there and several speakers, both from the faculty and trustees, bore witness to his

great contribution to the development of modern medicine and the affectionate regard in which he was held.

Dr. William E. Quine spoke more especially on Dr. Dudley's relation to medical literature. He told of the latter's coming to Chicago in 1875 and his starting the little medical publication known as the *Chicago Medical Review*. Dr. Dudley's first contribution to medical literature was the invention of the word, "Trachelorraphy," in 1878. The appropriateness of the word won it immediate recognition and it came into universal use. However, his first important contribution was a chapter on the displacement of the uterus in *Pepper's System of Medicine*. The quality of the chapter so impressed the profession that students of medicine clubbed together and had the chapter made into a separate book. Then the publishers saw its merit and Dr. Dudley's career was determined, for he devoted himself to the study of gynecology and produced his book, "The Principles and Practice of Gynecology," 1898, which in its degree of minuteness and accuracy of detail has never been surpassed or equalled by any book on gynecology. Booksellers say that it is one of the most profitable of all texts ever issued in Chicago, running through six editions. Shortly after this, Dr. Dudley wrote a very keen review of Dr. T. Gaillard Thomas' book on "Diseases of Women."

Among Dr. Dudley's more important contributions to medical literature Dr. Quine mentioned the following:

1. "Pressure Forceps *versus* the Ligature and the Suture in Vaginal Hysterectomy." (Trans. American Gynec. Society, Philadelphia, 1888.)
2. "A New Operation for Prolapsed Uterus." (*New York Jour. Gyn. and Obstet.*, 1894.)
3. "The Operative Treatment of Cystocele and Prolapsed Uterus." (*Jour. A. M. A.*, 1903.)
4. "Uterocystostomy for Accidental Wound of Uterus in Vaginal Hysterectomy." (*Annals of Surgery*, Philadelphia, 1904.)
5. "The Surgical Treatment of Complete Descent of the Uterus." (*Can. Jour. Med. Surg.*, Toronto, 1904; in the *Northwest Medicine*, Seattle, 1904; and in the *Canadian Lancet*, Toronto, 1904-1905.)
6. "Building a New Urethra." (Med. and Surg. Reports, St. Luke's Hospital, Chicago, 1903-1904.)
7. "Sarcoma which had Developed from a Uterine Myoma." (*Ill. Med. Jour.*, Springfield, 1905.)
8. "The Expansion of Gynecology and a Suggestion for the Surgical Treatment of Incontinence of Urine in Women." (Trans. Am. Gynec. Society, Philadelphia, 1905; *Jour. A. M. A.*, Chicago, 1905; *Am. Jour. Obstet.*, New York, 1905.)
9. "Technique to Prevent Stitch Hole Suppuration after Closure of Abdominal Incisions." (Med. and Surg. Report, St. Luke's Hospital, Chicago, 1905.)
10. "Technique of the Newer Operations for Shortening the Round Ligaments and the Uterosacral Ligaments for the Correction of Backward Displace-

ments of the Uterus." (*Am. Jour. Med. Sci.*, Philadelphia and New York, 1906.)

11. "A Plastic Operation for Covering the Vulvar Surfaces with Skin after Excision of Extensive Growths of the Vulva." (*Surg., Gyn. and Obstet.*, Chicago, 1906.)

12. "The Utilization of the Broad Ligaments in Complete Descent of the Uterus. Hysterectomy and Removal of the Uterine Appendages." (*Jour. A. M. A.*, Chicago, 1906.)

13. President's Message to the Board of Commissioners of Public Welfare Work of the State of Illinois, January 19, 1918. (*The Institution Quarterly*, March, 1918.)

In general, Dr. Quine declared, the writings of Dr. Dudley are characterized by compactness and directness. There is no suggestion of inflation, but always a real contribution. Dr. Dudley has written too infrequently, but never without something to say. He has done more to popularize the best ideas and most progressive medical methods in the Mississippi Valley than most other physicians.

In thanking his friends for their expressions of regard, Dr. Dudley, in reminiscent mood, gave a most interesting résumé of his associations with some of the great pioneers in medicine and surgery during the last quarter of the 19th century, which was a period more prolific, perhaps, in scientific output than all previous time. Some of these were: Sir James Simpson, the first man to give chloroform in childbirth and oleshaussen; and in America, Emmet, Thomas, Peaslee, and others, all of whom were disciples of Marion Sims, father of modern gynecology. At present the world is on the eve of revolutionary medical advances, but the work of these men will continue.

Following the example of Plato, Dr. Dudley, in closing, emphasized the value of early association with great men, which to him had meant much. Thanking those present for their good wishes, Dr. Dudley gracefully reciprocated them. For nearly 40 years Dr. Dudley has lived before this community of Chicago and labored in it. He has won the greatest respect of the medical profession, because of himself and because his work has been of such great importance in modern medicine. At this time he retires in the fullness of his powers amid the best wishes of his colleagues and many friends.

Correspondence.

NEED OF SERUM FOR TREATMENT OF INFLUENZA-PNEUMONIA.

City of Boston, Health Department,
City Hall Annex, Boston, Jan. 4, 1919.

Mr. Editor:—

Blood serum is urgently needed for the treatment of patients suffering from pneumonia incident to

influenza. Will you not urge upon those of your convalescent patients who are in a condition to give blood for this purpose the service they can now render by doing so?

Blood serum to be of value must come from patients who have recently, say within a month, suffered from pneumonia as a result of influenza, the presence of the pneumonic complications being evidenced either by the temperature range or by physical findings, or by both.

The preparation of the blood serum requires a high degree of technical skill and can be undertaken only in properly equipped laboratories. Persons who are willing to give blood will be promptly put into communication with laboratories where this can be accomplished.

The administration of serum, too, requires a high degree of technical skill, as it is administered intravenously, not subcutaneously. Its administration must be looked upon, therefore, as a surgical procedure that can be done only by persons skilled in surgical technique, and under conditions necessary for asepsis.

Donors of blood can exercise their option as to whether they will give it free for the use of someone unable to pay for such a sacrifice, or whether they will give it only for the benefit of persons who can and will compensate them for the service rendered.

Names of donors should be sent to the Health Department, accompanied by their addresses and telephone calls, the names of physicians who attended them when they suffered from influenza and pneumonia, and the dates when the patients were pronounced well.

Your cooperation in this matter is earnestly solicited.

Yours very truly,

WILLIAM C. WOODWARD,
Health Commissioner.

SOCIETY NOTICE.

NEW ENGLAND PEDIATRIC SOCIETY.—There will be a meeting of the New England Pediatric Society on Friday, Jan. 24, 1919, in the Amphitheatre of the Children's Hospital, Longwood Avenue, at 4.30 p.m.

Clinical cases will be presented by John Lovett Morse, M.D., Boston; William E. Ladd, M.D., Boston; and Robert W. Lovett, M.D., Boston.

WILLIAM E. LADD, M.D., President,
RICHARD M. SMITH, M.D., Secretary.

RECENT DEATHS.

THOMAS TOUNGE PERKINS, M.D., of Cliftondale, died of heart disease while making a professional call, December 6, 1918. He was a graduate of Boston University School of Medicine in 1898, and of Harvard Medical School in 1901, and was school physician of Cliftondale. He was a Fellow of the Massachusetts Medical Society. His age was 44.

DR. IRA C. GUPTILL died recently at the age of seventy-four at his home in Northboro. Dr. Guptill was born in Limerick, Maine. He was a graduate of Bowdoin College and of the Dartmouth Medical School. He had been a resident of Northboro for thirty-eight years.

DR. THOMAS J. COURTNEY, a lieutenant in the Naval Medical Corps and attached to the U. S. S. *Oklahoma*, died on December 27, at the base hospital, Norfolk, Va. He was taken ill in European waters and treated at the General Hospital, Queenstown, Ireland. He recovered sufficiently to return on his ship, but upon arrival at Norfolk was transferred to the base hospital.

Dr. Courtney was born in Worcester and was graduated from Tufts Medical School. For some time he was a member of the medical staff of St. Mary's Hospital, Brooklyn, and later practised in Waltham. He was a Fellow of the Massachusetts Medical Society.

The Boston Medical and Surgical Journal

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Original Articles.

INSTITUTIONAL DENTISTRY (INSANE). REPORT NO. 4.

BY FREDERICK A. KEYES, D.M.D., BOSTON.

DENTISTRY in public institutions, although of the greatest importance in connection with the welfare of the inmates, has in the past received too little attention. Of late years it is very gratifying to note a growing interest in this matter, which has resulted in at least some sort of effort to give dental care to those under State charge. However, although Massachusetts, as compared with other states, may well be proud of her progress in this regard, she has not by any means attained the degree of perfection for which she is otherwise noted. This article aims to indicate, in a general way, defects which still exist, and to suggest possible remedies. It is based upon the author's personal knowledge of dental conditions in one of our largest institutions, and upon conclusions drawn after careful study of conditions indicated in health reports of superintendents and trustees of others.

My first report of dental conditions in insane hospitals in Massachusetts was submitted to the trustees of the Medfield State Hospital March 31, 1915, followed closely by a second

report dealing more minutely with the dental conditions in the institution April 30, 1915. A third report was submitted July 17, 1916. These reports, together with two other monographs on this subject, have been printed in different medical and dental journals since that time.

The first report proved that the teeth of the inmates in public institutions were in a neglected condition, and that very little effort was being made to remedy the situation. Since that time there has been some slight improvement; but there is still room for more. For example, the 38th report of the State Board of Charity in Massachusetts contains many recommendations for legislative action, all of which have been forwarded to the secretary of the committee. These recommendations cover nine closely printed pages, one-half of which are devoted to improving the medical care of patients. In this report, however, there is not one suggestion relative to the dental care of the inmates,—this in spite of the medical report contained therein lamenting the great increase in diphtheria, chicken pox, whooping cough, and tuberculosis in many of the institutions. One of the largest schools for boys reports that "Throughout a considerable portion of the year the organization of this institution has been radically affected by the diphtheria epidemic which broke

out in the summer of the year preceding. It became necessary in the absence of adequate hospital and isolation facilities to segregate the cottage group, making each cottage a unit in itself. No communication of any sort between these groups was allowed. As a result, many functions of the school requiring assembly were interrupted. The disease finally disappeared upon the approach of warm weather and after an isolation camp was established at a distance from the center of activity." Another large institution for children reports: "There has been rather more than the average minor sickness this year—mumps and chicken pox have formed an annoying complication to the medical staff, but no serious setbacks resulted." Still another reports: "In mid-winter of 1916 an epidemic of colds and la grippe kept the hospital department filled with temporary cases. At one time, in January, fifty boys, or one-fifth of the enrollment, were in bed in the hospital. This trouble soon abated, however, and the remainder of the year has shown only occasional instances of minor ailments."

It is very interesting to note that no progress from a dental viewpoint has been reported in any of these institutions in the last three years. In fact, the 38th report of the State Board of Charity contains no reference whatever to dental work.

A review of the first annual report of the Massachusetts Commission on Mental Diseases disclosed at least a desire for improving the dental conditions in our institutions for the insane. An extract from the report of the superintendent of one of our insane hospitals, quoting the amount of work done by the visiting dentist offers this suggestion: "That our patients have need of the constant attendance of a dentist and it is hoped that we may be able to extend the service to full time instead of two half days a week as at present." Another superintendent is quoted in this report as follows: "The teeth of the majority of our patients are in a deplorable condition and I again recommend that a resident dentist be added to our force and that \$800 be appropriated for that purpose." A general statement under the heading, "Progress in Institutions," states that "practical dental work has been largely increased in several hospitals." This report, then, shows that some definite steps have been taken in the right direction.

In state prisons and reform schools, conditions at present show a decided improvement over those previously reported, but there is still room for greater improvement as the following quotation from a superintendent's report will show: "The oral conditions of the inmates are very poor, and as the dentist gives only one day a week it is not possible for her to see each woman as she is admitted and treat all cases thoroughly."

In lying-in hospitals affairs are still in the old chaotic state.

Let us consider now conditions in general hospitals. It is true that dentists have been appointed to the staffs of many of our hospitals; but the work done by them, in most cases, is purely emergency, and not much of that. The out-patient clinics of these hospitals are still continuing the splendid work which they have always done. But real coöperation of dentist with surgeon and medical man,—for example, in preparing patients' mouths before laparotomies where possible,—not as yet exist.

In institutions for the care of tuberculosis there is still agitation for dental work, but little has been accomplished.

In state industrial schools, orphan asylums, etc., conditions are deplorable. Spasmodic attempts at improvement have been made, without any evident progress. Most of these institutions have a visiting dentist who "stops a tooth-ache or pulls a tooth when needed." Systematic dentistry, where each child is examined carefully and all decayed teeth extracted and all carious cavities filled, does not at present exist. It seems that the mere appointment of a visiting dentist to the staff of one of these institutions covers the law and conveys the impression that the institution is showing a lively interest in the care of its inmates. But investigation would prove conditions similar to those found elsewhere.

From this brief analysis of dental conditions one is forced to conclude that there has been very little interest or progress in the majority of our public institutions.

Is it possible, then, that the modern theory of focal infection is wrong? Surely, superintendents and physicians in our public institutions are not familiar with its importance if they persist in neglecting the mouths and teeth of those under their charge. Granted that they do believe in focal infection, do they feel that

these patients are receiving adequate protection if they neglect their dental care?

The one encouraging report of all these is found in institutions for the insane. An example of the possibilities for improvement in this direction may be found in the Medfield State Hospital. My examination of the inmates at this hospital, in April, 1915, disclosed the following conditions:

Total number of patients examined.....	1697
Number of cases of pyorrhoæa.....	330
Number of cases of patients needing extraction	680
Number of cases of acute alveolar abscesses	72
Number of patients with carious teeth....	150
Number of patients in need of both upper and lower dentures.....	270
Number of patients in need of full upper dentures	201
Number of patients in need of full lower dentures	30
Number not examined.....	28
Number of cases needing cleaning (all with the exception of two and those edentulous patients)	
Number wearing plates.....	40
Number of cases of stomatitis.....	30
Number of cases of cleft palate.....	1
Number of cases of harelip.....	1

My report to the trustees which followed offered the following remedial suggestions:

1. A resident dentist, or
2. An increase in the hours of the visiting dentist, or
3. Two visiting dentists.
4. Examination and tabulation of work by the card index system.
5. A supply of tooth-brushes and powder, and the enforced use of the same.
6. That extraction be done before any other work.
7. That the use of emetin hydrochloride for pyorrhoæa be discontinued at the hospital.
8. That edentulous patients be supplied with plates.
9. A new equipment for the dental infirmary.
10. The assignment of two nurses as assistants to the dentist.
11. Lectures to nurses on the importance of dental hygiene.
12. The training of one nurse to clean teeth.

Of these twelve suggestions, all of the most important ones were carried out to the letter. The institution has now had a resident dentist for over two years, and this is the only possible way in which the teeth of the inmates of large institutions can receive proper attention. The card index system has proved very valuable. Tooth brushes and powder have been more abundantly supplied than ever before. Extraction has been done on all patients first, and plates are gradually being supplied to edentulous patients. We have at present a well equipped dental infirmary.

The twelfth suggestion, relative to the cleaning of teeth by a nurse, has not as yet been carried out. After careful consideration of the matter I purposely discouraged it. Some of our institutions which have visiting dentists have employed the so-called dental hygienist to clean teeth. This is certainly a most illogical procedure, unless such an institution has also a resident dentist who has first completed all necessary extractions and fillings. For surely it is a waste of time to clean the teeth of patients who have dirty roots, broken down teeth, abscesses and cavities, without first remedying these defects. When all these diseased conditions have been remedied, then the cleaning of teeth is purely a hygienic measure. In Medfield, after two years' trial of resident dentists, who accomplished an enormous amount of dental work, we still find enough of the important work—extracting, filling, etc., to keep us occupied indefinitely. Under these conditions, then, a dental nurse wholly occupied in cleaning teeth in a large institution, while the visiting dentist spends but one or two mornings a week doing emergency work, is an absurdity and a waste of time. From a financial viewpoint, also, there is no basis for the employment of a dental nurse. A dental nurse receives, I understand, \$40 a month and maintenance. The visiting dentist, for one or two mornings a week, receives \$10 compensation per week. Therefore, the yearly salary of both is \$1,000, which is more than the resident dentist at Medfield receives for full time work. To recapitulate, then,—until such time as every institution employs a resident dentist, and until we have eliminated the enormous amount of septic conditions in patients' mouths, the dental nurse is purely ornamental. As a teacher of general dental hygiene, or as an officer to enforce the use of the toothbrush she might be of some use, but, even then, not much more so than any competent nurse or attendant.

A report of dental work done by our first resident dentist at Medfield for one year is as follows:

Dear Dr. Keyes:

I have been requested by the Superintendent, Dr. Cahoon, to submit to you for examination a report of the dental work accomplished in the past year, and the present conditions in the Medfield State Hospital. The chart system and the individual cards have been followed out, which show precisely the present conditions as compared with those of a year ago.

The conditions I found here were very discouraging. The old office was situated in the B-I ward. The room contained, among many other things, an old plush chair, a broken, old-fashioned foot-engine, a small bedroom table with about a dozen ancient operative instruments and an oil lamp with a rusty pan for sterilization.

I immediately furnished the place with all of my personal instruments, both operative and laboratory, which I had fortunately brought with me and which were absolutely necessary to accomplish any work at all. This office was used from September 1st until December 1st, when the new office in the infirmary was opened. I have endeavored to equip the new office in a practical and attractive manner, which now contains the following furnishings so necessary to accomplish the great body of work continually presented:

- a. An electric engine with slip-joint hand pieces.
- b. A "Harvard" dental chair.
- c. A "Clark" fountain cuspidor.
- d. An aseptic bracket table.
- e. A new "Harvard" instrument cabinet.
- f. An electric sterilizer.
- g. A bracket dental light for operative work.
- h. A novocain jar for sterilization of cups and syringes.
- i. A desk where records are filed.
- j. Rug, screen, couch, chair, chair coverings, sanitary cups, mirror, hat rack, dental napkins, etc.

In the basement a work bench has been furnished and I have equipped same with all necessary laboratory apparatus. It was at first considered an impossibility to accomplish much among this class of patients in this particular work, but contrary to expectations, the results have surpassed by far even our greatest hopes. The patients have been eager to obtain any dental treatment possible and prove their interest by their cooperation in the work in the wards, their promptness in appointments at the office, their conduct in the chair and their enthusiasm and extreme gratification for the work done for them. Some of the most violent patients have conducted themselves in a decidedly unexpected and actually excellent manner in the dental treatment.

The greatest part of the year has been spent in treating the patients suffering from acute alveolar abscesses and swollen painful teeth. Such cases are reported daily by the visiting physician and these are given immediate attention, thus eliminating the unnecessary suffering and possible facial disfigurement in awaiting the arrival of the day when the visiting dentist would come.

Novocain has been used for extractions and ether resorted to when necessary. The need of a nitrous oxide and oxygen apparatus is great, as too much unnecessary suffering is forced upon the patients and extra labor upon the dentist without this anæsthetic.

Sealing the teeth, the first and greatest necessity, has been done in the active cases of pyorrhea. Tooth powder is supplied in large cans to each ward and the charges instructed to have them filled when necessary. Collapsible tin tubes have been furnished and filled with tooth paste, this form being better appreciated by the female and younger patients. These tubes also are refilled and returned to the patients.

When actually necessary, attendants are allowed first aid treatment and extractions. This factor also eliminates the necessity of losing them from their work and the unnecessary inhuman treatment imposed upon them in endeavoring to find relief by travelling three or more miles to some surrounding town, trusting to find a dentist who would give them attention.

Plates can now be furnished and repaired at a very small expense. Ill fitting plates are found in the mouths of some of the most violent patients who often do not wish to give them up temporarily for

repair in fear that they will never have the use of them again. Many patients have only one plate while the opposite jaw contains no teeth or plate to articulate with, but they still manage to retain them even in such condition.

Visiting dentists in the past have been paid \$10.00 per day and expenses. Only emergency cases were then treated as the preceding dental conditions allowed only such work. A plate or crown made for a patient was considered a special case for which the dentist was paid, in addition, the usual fee of twenty or twenty-five dollars for the former and eight or ten dollars for the latter. Plates and crowns are now furnished at a minimum cost; the output of plates and repairs justify in this one factor alone the economy and satisfaction evidenced in the daily work as a resident dentist.

All boarding out patients are brought in by the social worker to the institution for dental treatment and the necessary work done for them as for the regular hospital patients. The present conditions and the success of the past year give me confidence and I expect to meet successfully the great amount of work ahead.

I wish to express my appreciation for the co-operation and interest of the Superintendent, Doctor Cahoon, and the members of the staff in the work which I have undertaken with them.

I also wish to express my appreciation to you, particularly for the untiring effort you have shown in the past three years to better the oral conditions not only in this institution but in all other institutions throughout the state.

The statistics of dental work done by me are as published below:

Total number of patients examined.....	1697
Number of extractions	
Female side.....	2730
Male side.....	1434
Number of acute alveolar abscesses treated and cured.....	58
Number of cases treated of chronic suppurative alveolar abscesses discharging externally through fistula.....	8
Number of cases of pyorrhea treated.....	59
Number of fillings inserted in carious teeth.....	383
Number of exposed pulps, removed by pressure anæsthesia.....	30
Number of root canal fillings.....	79
Number of patients supplied with full upper dentures.....	39
Number of patients supplied with full lower dentures.....	14
Number of plates repaired.....	64
Number of patients resisting.....	6
Number of fractures.....	8
Number of gold crowns made.....	8
Number of bridges.....	4 tooth 1 5 tooth 1
Number of artificial replacements for attendants through accidents by patients.....	4
Number of cases of stomatitis treated.....	25
Number of cases of cleft palate.....	1
Number of cases of hair lip.....	0
Number of prophylaxis given.....	524
Number of cases of amputation of diseased root ends.....	2
Number of cases of diseased maxillary antrum.....	1
Various emergency cases at all times for odontalgia and neuralgia.	
Respectfully submitted,	

JOHN D. THOMAS, D. M. D.

Resident Dentist.

The progress in dental conditions noted by Dr. Thomas in his report is very encouraging

and shows the hearty coöperation which the trustees and superintendents are extending to the resident dentist. Dr. Thomas was commissioned in the United States Army Dental Corps and resigned from Medfield October 5, 1917. He was succeeded by Dr. Schlichte, whose work was as follows:

Number of extractions.....	910
Number of acute alveolar abscesses treated and cured.....	22
Number of cases treated of chronic suppurative alveolar abscesses discharging externally through fistula.....	2
Number of cases of pyorrhea treated.....	71
Number of fillings inserted in carious teeth.....	55
Number of exposed pulps, removed by pressure anaesthesia.....	8
Number of root canal fillings.....	11
Number of patients supplied with full upper dentures.....	19
Number of patients supplied with full lower dentures.....	8
Number of plates repaired.....	21
Number of patients resisting.....	1
Number of fractures of mandible.....	1
Number of gold crowns made.....	0
Number of bridges.....	0
Number of artificial replacements for attendants through accidents by patients.....	5
Number of cases of stomatitis treated.....	5
Number of prophylaxes given.....	195
Number of cases of amputation of diseased root ends.....	0
Number of cases of diseased maxillary antrum.....	0
Various emergency cases at all times for odontalgia and neuralgia....	1

Dr. Schlichte resigned March 20, 1918, and also entered the Army. He was succeeded by the present resident dentist, Dr. William A. Milliken.

Added to the statistics of Dr. Wade, who was appointed visiting dentist in 1915, while the question of a resident dentist was being considered, we find the following grand total of work done in the last three years:

Number of extractions.....	7355
Number of acute alveolar abscesses treated and cured.....	93
Number of cases treated of chronic suppurative alveolar abscesses discharging externally through fistula.....	10
Number of cases of pyorrhea treated.....	71
Number of fillings inserted in carious teeth.....	445
Number of exposed pulps, removed by pressure anaesthesia.....	38
Number of root canal fillings.....	90
Number of patients supplied with full upper dentures.....	58
Number of patients supplied with full lower dentures.....	22
Number of plates repaired.....	85
Number of patients resisting.....	1
Number of fractures of mandible.....	1
Number of gold crowns made.....	8
Number of bridges.....	4 tooth 5 tooth

Number of artificial replacements for attendants through accidents by patients.....	0
Number of cases of stomatitis treated.....	50
Number of prophylaxes given.....	767
Number of cases of amputation of diseased root ends.....	2
Number of cases of diseased maxillary antrum.....	1
Various emergency cases at all times for odontalgia and neuralgia.....	
Number of cases of necrosis of mandible.....	1

My last examination of the patients at Medfield showed the following conditions:

	April, 1918
Number of cases of pyorrhea.....	203
Number of cases of patients needing extraction.....	160
Number of cases of acute alveolar abscesses.....	0
Number of patients with carious teeth.....	41
Number of patients in need of full upper dentures.....	166
Number of patients in need of full lower dentures.....	49
Number of patients in need of both upper and lower dentures.....	301
Number not examined.....	6
Number of cases needing cleaning.....	426
Number wearing plates.....	89
Number of cases of stomatitis.....	5

If, after two years of intensive treatment by resident dentists the Medfield State Hospital presents this amount of work still to be done, surely institutions which have not as yet employed a resident dentist must be held responsible for gross neglect. What are we to expect from these institutions in the future? Will they follow the example set by Medfield, or will they remain on their old haphazard, impractical basis? The present slipshod individual work which is being done by institutional dentists, however well intentioned, will never be successful until it is thoroughly unified, supervised and systematized.

NECK INJURIES.

BY HERMAN W. MARSHALL, M.D., BOSTON.

THE following selected cases will serve to illustrate certain obscurities still to be found among injuries of the neck; and a brief discussion of a few points in diagnosis and treatment follows the clinical histories given.

CASE I. A 47-year-old farm laborer was thrown from a wagon and landed against a wooden framed gate covered with wire netting. He cut his forehead and had the scalp wound sewed up within a few hours. He was not rendered un-

conscious, although he landed on his head, but he has not been able since to open his mouth widely.

X-rays of his skull were taken at one of the Boston hospitals two or three weeks after the accident; and at home he received electrical treatments regularly for many weeks. He did not go to bed at all for six weeks following the injury and slept sitting upright in a chair. In addition to his inability to open his mouth widely, he has had difficulty in swallowing.

At the writer's examination, made 13 weeks after the initial injury, his symptoms were subsiding. He could then move his head in all directions to a limited extent and headaches had subsided, which, at first, had been very severe. No support was worn, but he could not stoop over to saw wood at the time of examination because of dizziness; and he was obliged to sleep on his back on account of discomfort produced in attempting sleeping on his side.

The lower jaw could be opened to one-half its normal range as an extreme limit; and in doing so pains were produced in the suboccipital and frontal regions of the head.

Head motions were restricted as follows: Forward and backward motions were limited approximately one-half. Lateral bending to the left side and rotation of the head to the left were possible through only a few degrees, while in reverse direction toward the right both motions were freer, yet only one-third of normal extent.

Neck muscles were all of average development and were not held rigidly. No bony crepitus was felt when the neck was moved. Tactile skin sensations were normal.

Tenderness to pressure was felt located deeply on both sides of the neck at the mid-cervical level.

X-rays showed a fracture through the base of the odontoid process of the second vertebra with slight forward dislocation of the process. Figure 1 shows the lateral view of the cervical spine in this case, and the original plate shows the fracture positively with some bony union between the fragments apparently.

The patient was lost track of entirely by the writer after this single examination.

Case 2. A 29-year-old Italian laborer was struck squarely on top of the head, as he was walking along, by a brick after it had dropped five stories. He was rendered unconscious for a brief time; and for four months after the



FIG. 1.—Fracture of odontoid process of second cervical vertebra with slight forward dislocation of the fragment.

accident he was said to have disturbances of vision.

Several sets of x-rays of the cervical spine taken at one of the Boston hospitals, were decided to be negative. Occasionally a slight clicking was noticed by the patient when he moved his head, comparable, he said, to the clicking of two fingernails against each other. Once, at the hospital, a slight crepitus was felt by the physician in attendance. A supportive Thomas collar was fitted at the hospital four months after the date of injury, because of pain and limitation of motions in the neck.

Thirteen months from time of initial injury, when examined by the writer, he wore a Thomas collar to support his head, and steadied the latter constantly with fingers against chin when the collar was removed for examination. Neck motions were limited as follows: Backward bending was possible through one-half the usual range without much pain, and this motion constituted the principal movement. Lateral, forward and rotary motions were practically completely restricted at the examination. Muscles all showed fair equal development and were held tensely when the collar was not on. He claimed that he felt dizzy and faint very soon if he did not wear the collar.

X-rays taken in connection with this exam-



FIG. 2.—Hypertrophic hook on first cervical vertebra, and probable old fracture of lamina of the same vertebra.

ination showed an unusual hook-shaped hypertrophic process at the attachment of ligaments to the bifid spinous process of the first cervical vertebra (Fig. 2). The right lamina of the vertebra presented an appearance consistent with an old fracture of the lamina with union of fragments again without appreciable displacement.

A steel head support which afforded more complete protection increased a little the range of head motions when it was finally discarded. Calcification in the injured ligaments was increased noticeably also in a few months. Eighteen months after his accident, when last seen, he still had on a Thomas collar and still complained of dizziness, nor had he returned to work.

Case 3. A 47-year-old man was in an automobile accident, and was thrown from the car, injuring his leg. He was confined to bed for awhile and on return to work, eight weeks later, he found there was something in addition to the matter with his neck. It creaked as he turned his head from side to side, but was not very painful, and accordingly he continued at a regular occupation for a period of more than two years. Then a second injury, received in ascending a low studded stairway, dazed him for a few minutes when he hit the top of his head on an overhead timber. He resumed work for

a couple of hours after the injury, before persisting discomfort compelled him to quit, and since then he has not been able to work.

X-rays were taken of the cervical spine after the first injury, but there was no bony defect to be seen.

The writer first made an examination three months after the second injury. The head was held naturally without artificial supports then; but its motions were somewhat limited. He could bend his head forward through one-half its usual range before pain was felt at the base of the neck in back. Backward and lateral ranges of motions were restricted a little, while rotation of the head was practically normal. A curious snapping could be felt in the mid-cervical region with each rotary movement of the head. An inflammatory area, tender to touch, circular in outline, slightly elevated, and nearly the size of the palm of the hand, was situated at the back of the neck with its center at the lower cervical spinous processes. Weakness and numbness in the right hand, also numbness of the left thumb, hyperesthesia of the scalp, and feeling of nausea were complained of. The right hand grip was weak, and there was considerable atrophy of the muscle mass lying to the left side of the median line in the back of the neck.

X-rays of the cervical spine were taken again, and once more there were no demonstrable bony lesions revealed. Treatment instituted immediately through protection for the neck by head immobilization resulted at first in an aggravation of the symptoms from too much tilting backward of the head with a Thomas collar. A steel head support, which fixed the head more immovably and in better position on shoulders and body, controlled the situation, however, and allowed symptoms slowly to subside; yet not until the latter had assumed grave significance with increasing nausea, increasing weakness of arm muscles, spreading numbness in the left hand and slight dragging of his foot in walking.

He left the writer's care to go to another part of the country; but was heard favorably from, with leg weakness gone, strength of arms increasing and nausea abated. He explained, too, that he had noticed his "Adam's apple" had become more immovable again, whereas at one time it could be pushed or stretched away from its normal location to an unusual degree. He still had some atrophy of posterior neck

muscles and continued to wear the head support.

A diagnosis of a fracture of a lamina of one of the lower cervical vertebrae was made in this case from the clinical history, even in face of negative x-ray findings. Evidently there developed abnormal pressure upon the cervical spinal cord, and in the presence of an abnormal chronic inflammatory area at the base of the neck behind, with clicking crepitus, and history of injuries, it seems clear that the first accident probably fractured the lamina, while the less severe second accident started up a traumatic swelling locally which continued to increase because no rest for the neck was permitted the second time, as after the first injury. Instead, ordinary movements of the head were allowed unconsciously to continue to aggravate the local oedema until pressure within the bony spinal canal and visible swelling externally developed.

Case 4. A 48-year-old Sicilian woman was standing with head bent at her occupation of candy packer. A machinery belt overhead broke and struck her on the shoulder and neck, knocking her down. She was taken to the Haymarket Relief Station in Boston, and a month later visited another Boston hospital with alleged severe pain associated with all neck movements. A Thomas collar was fitted in the hospital, and x-rays taken there were negative for bony injury in the cervical region. Additional x-rays, taken elsewhere three months after the injury, seemed to show a very slight dislocation of the third cervical vertebra. X-rays taken again one year and eight months after the accident, were judged to be wholly negative; but, nevertheless, the patient continued to complain of neck soreness and wore a dilapidated Thomas collar. She presented a pitiful appearance,—a tiny, wrinkled Italian woman with an old shawl over her rounded, stooped shoulders, with head bent, and the latter partly supported by her hand. An examiner, meeting her for the first time at this stage, advised sending her to a hospital for extension treatment in bed, followed by baking and massage and a properly fitted Thomas collar. This advice was not followed, because the insurance company which had been paying compensation for her disability ascertained from her neighbors and tradesmen that she appeared normal enough at home, that she did not wear the Thomas collar there, and that she had the daily

care of a number of small children, doing all the things an uninjured individual could do.

The diagnosis of this case must be, therefore, an injury to the neck complicated by subsequent malingering. The writer was fooled at first, like all other doctors have been, at her first appearance; but it should be mentioned that in his last examination, one year and eight months after the accident, the medical opinion rendered independently of insurance company data, was that she obviously had become a malingerer. It was possible, through familiarity with her history and clinical progress to detect the falsity of her later complaints, in spite of her pathetic appearance and skillful acting.

Case 5. A 35-year-old man, roofer by occupation, fell from a roof when a staging broke. He dropped over the eaves to the ground, a distance of 25 feet, and fractured two ribs, besides injuring his neck. He could crawl away himself from the spot where he landed, and he lay on the grass nearby until taken directly to a hospital. There he remained two or three weeks and was fitted with a Thomas collar.

At the examination made by the writer one year and five months after the injury, he still complained of stiffness and soreness in the neck, also dizziness when he stooped in trying to work. Motions of his head, after one year and five months, were restricted as follows: Lateral bending to the right side was limited to twenty degrees, left side to twenty degrees. Rotation to right side was restricted to thirty degrees, left side to forty-five degrees. Forward bending was limited one-third and backward bending of the head was restricted two-thirds. There were no muscles visibly atrophied, no bony crepitus felt when the neck was moved, and no localized tenderness to pressure in the cervical region. Pain and soreness were referred by him to the occipital region when he moved his head, and he stated these symptoms were worse on the right side.

The spinous process of the second cervical vertebra was very slightly more prominent than usual; and this appearance taken in connection with x-ray appearances, namely an unusual curve formed by the anterior surfaces of the bodies of the cervical vertebrae (See Fig. 3) suggests a slight dislocation between first and second cervical vertebrae. The idea is



FIG. 3.—Injury to cervical spine with probable partial rupture of some of the ligaments near base of skull. Slight derangement in alignment of bodies of upper cervical vertebrae.

further borne out by the antero-posterior x-ray view taken through the open mouth, which demonstrated an apparent slight lateral tilting of the first vertebra in its relations to the odontoid process.

Two interesting conditions existed in this patient's neck apart from the injury. There was noticed an enlargement of the thyroid gland that had been recognized first after he had been having baking and massage for several months regularly to relieve neck stiffness. These physical therapeutic measures, radiant heat from electric light bulbs with manual manipulations and massage were continued for eleven months. As a result the neck had limbered up a few degrees apparently in every direction. After physical therapy had been stopped the patient stated that swelling of the thyroid gland appeared to diminish somewhat; but it still existed at the time of the writer's examination.

The cause of abnormal increase in size and diminution again in size of the gland can be plausibly explained at least by the prolonged very thorough treatment with mechanical therapy and radiant heat. Administrations

perhaps produced increased activity within the thyroid and cessation allowed subsidence of thyroid tissue activity again.

Hypertrophic changes are to be noted in the x ray (Fig. 3), on the anterior margins of the bodies of the third and fourth cervical vertebrae. The significance of these overgrowths and calcifications in the neck, as elsewhere in the bony framework, probably mean local impairment in physiologic function of the affected tissues. Beginnings are seen here which are liable to increase as the result of the injury received, until the neck becomes stiffer and permanently limited in its motions. One such patient the writer has seen had his neck stiffen completely in five years, following a severe neck injury, despite all treatment which was tried. A prognosis has been hazarded with this patient, therefore, that he will have considerable permanent stiffness as the result of his accident, because his symptoms are now increasing a trifle rather than abating at the end of seventeen months.

DISCUSSION.

Correct interpretations of clinical findings and of x-ray appearances in neck injuries require balanced judgment of different factors entering into each situation, just as surely as correctly balanced comprehensive views are needed for right understanding of appearances found in lower parts of spines. Precise knowledge of anatomy alone, while indispensable, never is sufficient for most accurate estimations of physiologic balances between the bones on the one hand, and on the other hand ligaments and muscles which respectively bind them together and move them.

In the neck, as in the lumbosacral spine, strengths of individual muscles and strengths of ligaments cannot be directly measured by clinical means. Reliance has to be placed therefore, in part upon subjective symptoms changes in feelings of strength or weakness, degrees and rates at which such changes have occurred.

Occasionally loss of strength from muscle atrophy can be judged objectively and greater dependence can be placed upon such data. Subjective symptoms, although very unreliable often, cannot be ignored as long as they are the only indicators of important physiologic functions, and especially as it is possible with prac-

tice to learn to discard the most unreliable ones.

Attention should be called again to the fact that matters of most vital importance in every case are degrees of normal physiologic function which are possible, not anatomical variations or defects, except as the latter indirectly influence the former through the existing physiologic balance between bones and their flexible supports. For good functional capacity sometimes is possible with decided structural peculiarities because muscles and ligaments hypertrophy and compensate perfectly for the latter inequalities.

X-rays of cervical spines demonstrate their positive values in instances of dislocation, fracture, and of bone disease so often that it is needless to emphasize their great importance. The patient first mentioned above, with a fractured odontoid process, for illustration, obviously needed an x-ray before any neck manipulations were attempted. Negative x-rays of cervical spines do not always indicate injuries of minor importance; because there are occasional instances in which fractures cannot be identified on the plates at all, as in case three, cited above, or in case two, where an old fracture can be reasonably suspected without ever being absolutely proved only after a long period.

Negative x-rays with severe ligamentous strain in presence of existing hypertrophic bony changes do not necessarily signify a favorable prognosis. On the contrary, if hypertrophic changes represent serious wear and tear of past events and past time on the neck tissues, then the new trauma received is likely to start an increasing stiffness despite treatment.

Treatments for neck injuries have, therefore, to be broadly conceived, and hypertrophic tendencies combated with internal medical measures, as far as possible, and modifications of diets to improve faulty vascular conditions which accelerate hypertrophic processes. Circulating blood should be given proportions in its constituents as far as practicable which are most favorable for quick repair of the damage to neck structures.

Local treatments, consisting of orthopedic supports combined with mechanical exercises or manipulations continue to be most effective; and degrees of effectiveness are dependent upon skill with which these two physiologically opposite measures are varied and united to suit individual needs of cases. Other forms of physical therapy such as electricity, moist heat,

radiant heat, are useful for superficial muscular stiffness at times, but do not reach deeply situated ligaments satisfactorily that are strained.

"One-idea" diagnoses and treatments constitute an increasing menace to successful management of cases as refinements of extreme specialization are allowed not infrequently to obscure fundamental principles of physiologic balances involved, and as special measures are prescribed in one-sided ways.

Periods of disability following neck injuries depend upon the severity of the trauma received, age and general condition of the patient, and on the kind of treatment given. There are possibilities for so many variations in each of these variable elements that generalizations are unsatisfactory. It can be said, however, that several months are needed usually with the majority of patients for recovery from moderately severe neck injuries. Partial permanent disabilities are not extremely uncommon, and, on the other hand, quick complete recovery in a few weeks is occasionally possible after apparently very severe accidents.

CLINICAL OBSERVATIONS IN RECENT EPIDEMIC OF INFLUENZA.

BY SAMUEL W. MYERS, M.D., BOSTON.

THE epidemic lasted, in my part of the city, roughly speaking, about a month, September 16 to October 16, 1918. The greater number of cases occurred in the first two weeks and then gradually subsided. Proportionately more patients developed pneumonia in the last two weeks than in the first two weeks. During this time I have treated approximately 250 to 500 patients, most of them from the beginning to the end.

A remarkable feature of the epidemic was the mildness of the infection as it occurred in children. Only two children had pneumonia. All children recovered. Only a few children had gastritis as a complication.

Another remarkable feature of this epidemic was the almost entire absence of any other disease. Only three patients had follicular tonsillitis, three had diphtheria, one true pneumococcus lobar pneumonia in an elderly man, and practically little else aside from these. Everything was influenza. I saw very few who could be helped by Christian Science.

Symptoms. They all complained of headache

dizziness, chilliness or fever; rawness or tearing sensation of the throat; heavy, tired feeling of limbs; pain in the lower region of the spine; cough was generally present.

Diagnosis was easy. They all had laryngitis or tracheitis, which was evidenced by the husky voice and hoarseness. Coryza was present in some. In contrast to a normal appearance of the tonsils and the pillars the uvula was either red or bluish-red. There was fever and increase in the rate of the pulse. Prostration was marked from the start. The respiration was feeble and shallow at the bases and often accompanied by atelectasis until the patient was made to breathe deeply. This may account, in part, for the tendency in many of these cases to pneumonia. There was a vaso dilatation of the skin, manifested by a purple to a bluish color of the skin associated with edema.

On the face, in a marked case, the redness over the cheeks and the bridge of the nose gave it almost the "butterfly" appearance and distribution of erysipelas. In a mild case there was only just blushing of the tip of the nose and *alae nasi*, and perhaps, also, a little on the central part of the forehead, the middle of the chin, and the middle of the upper lip. This predilection for the central part of the face made me look to see if there was anything corresponding to it in the mouth or throat. In the cases that I have studied, I have found either marked redness or a violet red appearance of uvula with edema. To elicit this sign the uvula should be observed by depressing the tongue very gently, care being taken not to cause the patient to gag.

Setting aside the cases of chronic pharyngitis and associated redness of the tonsils and uvula, the latter, normally, has either a pale or a whitish-red appearance. The markedly red uvula was especially suggestive in mild and abortive cases, where it was difficult to know whether the patient was merely frightened, fatigued, or really sick.

Such patients simply complained of slight headache or fatigue. The temperature was below 98. The pulse normal. Subsequent study of these cases proved them to be mild cases of influenza. There was usually a slight rise of temperature after patient was put to bed.

Complications. Bronchitis was the most common, or a part of it, from the start. Next in order was gastritis, or a gastric type of influ-

enza. Thirdly came pneumonia. Nose bleed occurred often during the stage of fever or during convalescence. It was generally unilateral. Albuminuria was not an infrequent complication. Otitis media I have seen only in two cases in adults, and one in a child. I had one case of empyema. I have not encountered very acute sinusitis.

The disease was aggravated, prolonged, or caused to relapse, by too early leaving of bed; inattention to the bowels, too early recourse to solid food, or excitement from company. In my opinion too much covering of patient, or fear of drafts also did harm.

Bronchitis was present from the start, or developed in the major portion of cases on the second or third day. It was marked by râles at the bases or throughout the lungs.

Gastritis. No distinct gastro-intestinal type of influenza was met, there being only gastric symptoms, but no intestinal symptoms. Gastritis in these cases developed either during the stage of fever, or else during convalescence. It was marked by nausea, vomiting, or abhorrence of food. Objectively, this was evidenced by local tenderness in the epigastrium. A few of these cases were associated with albuminuria.

Pneumonia. This was the chief complication. The infection localizing itself as a catarrhal process in the respiratory tract, causing a toxin which depresses the respiration, either directly by action upon its center in the brain, or indirectly by exhaustion, the patient soon falls an easy prey to pneumonia.

It usually set in between the third and fifth day and lasted from three to ten days. Any patient who had fever more than five days generally developed pneumonia. This complication was diagnosed very early, generally a day sooner than hemoptysis appeared. It is my impression that this was a more serious complication in patients who did not get to bed soon enough in the course of the disease; or, in those who suffered a relapse after leaving their bed too soon.

Objective Symptoms. Rise in fever, rapid respiration, cyanosis and local signs in chest. Pleuritic pain to require strapping of chest occurred only in two cases. There was either an area of dullness, bronchial respiration, or an area of localized coarse crackling râles. Consciousness was generally maintained through the entire course of the pneumonia. As in ordinary influenza, exhaustion was its chief characteris-

tic. In one case I suspected bronchiectasis from the foul odor of the sputum raised, but was unable to follow the case. The consolidation was evidenced by quickly spreading dullness, usually of the lower part of the back; either on the right or left side of the chest. The bronchial breathing was not always heard over the entire area of dullness. Over part of this dullness there were areas of localized coarse crackling râles. Bronchial breathing was often of a faint and distant type. Vocal and tactile fremitus were not always as marked as in ordinary pneumococcus lobar pneumonia. Consolidation in these cases was probably often a confluent broncho-pneumonia, probably accompanied by pleurisy. Consolidation was very often bilateral.

Albuminuria. A high tension pulse called attention to this and the urine showed albuminuria. Time did not permit a microscopic examination of the urine, but all patients treated as if for nephritis, the albumin in the urine disappeared and the tension in the pulse became normal.

Treatment. As prostration was the marked feature of this epidemic of influenza, therefore the principle of absolute rest was the basis of treatment. Patients were therefore put to bed and kept there at least three days after fever had entirely left. Not even for the purpose of going to the toilet was any patient permitted to leave his bed. After pneumonia a patient was kept five to seven days in bed with a normal temperature.

Two or three windows had to be open in the room. The patient was lightly dressed and lightly covered. The sponge water bath was found more effective than alcohol sponging. Patients were instructed to sit up high on pillows and breathe deeply a few times a day. Patients were forced to take much fluid and nourishing liquids.

I have found phenacetin to be more effective than aspirin in reducing fever and aborting the disease in adults. Only in a few obstinate cases did I find occasion to combine it with aspirin. In children, however, owing to the milder type of the disease and the depressant effect of phenacetin, I have used aspirin instead, with good benefit. In a few obstinate cases in children I combined aspirin with phenacetin. Brandy was combined with phenacetin or aspirin. Where there was a tendency to weakness

of the pulse I combined caffeine in large doses from the start. To combat a tendency to gastritis I have used sod. bicarbonate in all my powder prescriptions.

To prevent the development of pneumonia I have used, from the first, stimulating expectorants of the ammonium type wherever there was the slightest bronchitis. Where pneumonia developed, the stimulating expectorant was continued. Digitalis and caffeine were used with the first tendency of the pulse to weaken or become rapid.

Narcotics and sedatives were used without hesitation to ease the cough or induce sleep. The bowels were kept open not only by enemata, but by laxatives also.

Gastritis was treated by counter irritation, opiates, alkalis and diets.

A few blood pressure readings were made. One patient with pneumonia showed a systolic blood pressure of 80 and a diastolic which could not be read. Many of the very ill patients during convalescence showed a blood pressure below 105, and the second pulmonic sound was weaker than the aortic. It is my opinion that toxin depresses first the vaso-motor system, next the respiration, lastly the heart.

Mortality. All those who stayed in bed or developed pneumonia while staying in bed recovered. A few extreme cases will illustrate this point:

The patient with the very low blood pressure recovered. One patient was so severely effected by his pneumonia that he actually suffered from air-hunger for ten days and yet he recovered. One patient had pneumonia three times, complicated by left suppurative otitis media, and recovered. A patient with advanced pulmonary tuberculosis developed pneumonia after a few days of influenza. He had several smart hemorrhages. In spite of his T. B. condition and the hemorrhages, he recovered.

On the other hand, the patients who left their beds too soon fared very badly. One patient, a well-developed muscular man, made a quick recovery from a mild type of influenza, left his bed, against advice, to close the windows during a rain storm, developed pneumonia, got worse every day, and died in a few days.

A woman, eight months pregnant, with double mitral disease, developed pneumonia early in the disease, recovered on a Friday, left her bed on Saturday to go to the bathroom, had a re-

lapse, gave birth to her baby two days later, and died about 24 hours afterwards.

I was called upon to see three moribund cases with pneumonia. One died within a few hours after my visit; one in 36 hours, one in about 48 hours. A similar number of my serious patients drifted to other doctors and died under their care. My mortality was, therefore, either nothing or less than two per cent.

Convalescents. This was marked by loss of flesh and weight, pallor, sweating, and prolonged weakness. Often there was persisting cough or hoarseness. Various neuralgic pains are common. The heart and kidneys were not seriously affected. Convalescence was slow. The blood pressure continues low for a long time.

Medication. Phenacetin instead of aspirin should be used in adults, in uncomplicated cases. A stimulating expectorant should be used through the entire disease. Stimulants should be used in radical doses, if necessary. Irritation of the nose and throat should be avoided. Inhalation of eamphor or other irritating vapors should be condemned. Camphor, argyrol, etc., should be used only if there is an actual rhinitis present.

Vaccine seemed to aggravate the disease in a few of my cases. A few persons receiving vaccine as a prophylaxis did not develop influenza.

Conclusion. True epidemic influenza is manifested either by a bright red rash on face, or simply a violet blushing of *alae nasi*. This same phenomenon is observed on the uvula; and, at times, on the entire body.

There are always symptoms of laryngitis or tracheitis. A patient without a rash on face with pallor of nose and of uvula is probably ill with ordinary "grip."

The disease is characterized by marked and prolonged exhaustion out of proportion to the fever, pulse or duration of the illness.

In treatment, rest must be absolute, physically or mentally. Sitting up simply to have bed fixed, or one walk to the bathroom has caused a relapse with pneumonia.

Phenacetin in the great majority of patients aborts the fever and the general malaise in a few days. Where the pulse is weak or rapid caffeine citrate is given with it in the same dosage, usually three grains every two hours. Syrup ammonium hypophosphate in teaspoonful doses every three or four hours is regarded as the best expectorant and invaluable stimulant of

respiration. I used it during the entire course of bronchitis or pneumonia.

For cardiac depression, tablet digifolin gr. 1½ every eight to four hours was found to be dependable in nearly each patient. I combined it with caffeine citrate, grains two to five, every two hours. As the blood pressure is usually already low no nitrites were used. Venesection in one case gave temporary improvement. Perhaps it should be tried more often.

As a prophylactic, I make so bold as to suggest syrup of hydriodic acid, a teaspoonful two or three times a day, hoping that the iodism it causes in the respiratory tract may be of a protective nature.

Society Report.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, SIXTY-EIGHTH ANNUAL SESSION, HELD AT PHILADELPHIA, SEPTEMBER 23, 24, 25 AND 26, 1918.

THE session was called to order in general meeting at 10 A.M. Tuesday, September 23rd in the ballroom of the Bellevue-Stratford Hotel, by the president, Dr. Walter F. Donaldson, Pittsburgh.

THE PRESIDENT'S ADDRESS.—MEDICAL ACTIVITIES IN PENNSYLVANIA.

DR. FREDERICK L. VANSICKLE: For the first time in the history of the Medical Society of the State of Pennsylvania has it been bereaved by the loss of a president during his active term of office. Our late lamented worthy president, Dr. Samuel G. Dixon, whose demise was so untimely in the work of this Society, has left an imprint upon medical and civic affairs of this Commonwealth far greater than is possible to the average man. I would express the hope that the work established by Dr. Dixon may not be altered, perverted, or disorganized. With so few of the qualifications which he possessed, with so few of the honors which he received, I would voice my grateful appreciation upon being elected a successor to so great a man. Many duties confront us to-day: In the present situation the first duty of the medical profession is to organize in two classes requested by the Government, the Medi-

cal Reserve Corps and the Volunteer Medical Service Corps. It would be highly desirable to create in this society a commission to carry on a co-relation of work with the War Department. Social insurance requires the aid of every thoughtful worker in this field. Suggestions regarding amendments or alterations for the benefit of the profession should be submitted to the committee in charge. Fee bills as they relate to the treatment of injuries should be unified or a composite bill drawn. Closely allied is the question of annual or semi-annual examination of industrial workers in order to keep the worker fit. A greater business acumen should obtain in the medical profession. We, unfortunately, deserve the criticism that we keep books badly. The work of the Bureau of Medical Education and Licensure has shown it to be a most useful branch of the State's service. The work of the American Medical Association, through the Council on Medical Education, has rendered a great service to organized medicine, and I would here refer to President Bevan's address relating to the supply of medical men. It would seem eminently wise were the colleges of this State to adopt the plan therein recommended. A better scheme to safeguard the interests of the profession in its relation to legislative measures should be adopted. Upon the problem of the use of alcohol as a beverage we can have no neutral ground. The time has long since passed when we should demand of the Federal and State governments the enactment of laws eliminating the manufacture and sale of alcoholic beverages; not merely as a war measure, but for all the other known reasons. Pennsylvania must get into line.

INTERPRETATION OF THE MANIFESTATIONS OF SHOCK.

DR. C. C. GUTHRIE, Pittsburgh: In studying shock in the laboratory the first endeavor has been to discover the causative mechanism with the view of establishing scientific interpretations of the phenomena and with the ultimate purpose of developing rational methods of prevention and treatment. Studies have been limited to experiment with laboratory animals, mainly dogs. Investigation is therefore handicapped by the uncertainty of the conditions induced being identical with those in man, and by the difficulty in diagnosis. Our studies in the search for causative mechanism have been

for the most part negative. The evidence points rather to the central nervous system as the probable seat of primary change, particularly to the bulbar mechanism presiding over circulation and respiration. Results obtained in pronounced shock showed that both reflex vasomotor and respiratory response may be profoundly decreased. Decrease in reflex augmentation of arterial blood pressure occurred, both actual and in percentage of blood pressure. That the result in some instances was not due to stimulation fatigue was demonstrated. That it was not due to fatigue of a single path due to repeated stimulation, or to possible localized central fatigue was also shown. Before drawing conclusions from such observations it is necessary to know whether or not reflex vasomotor augmentation is a true index of the state of activity and capacity of the vasomotor mechanism. We are inclined to believe that shock of sudden onset in normal individuals preponderatingly is of inhibitory character, which is in agreement with a view expressed by Meltzer. It is recommended that the term shock be reserved for the condition exemplified by the acute clinical state; and that the term collapse be employed to designate the moribund state following shock or any other condition. Experimental evidence is presented supporting the probability that the primary derangement in shock is of nervous character. In collapse, indirect and general considerations strongly indicate profound nervous derangement. The conditions in shock and collapse differ fundamentally and treatment indications differ accordingly. In shock associated with severe hemorrhage, restoration of blood volume is indicated. For this purpose transfusion seems best, but beneficial action may be obtained by intravenous injections of artificial solutions. The addition of a colloidal substance to such solutions causes their longer retention. For this purpose dilute acaeia seems preferable to other substances hitherto employed. Preventive measures and prompt treatment are strongly indicated. Preventive measures are worthy of the most serious consideration, but they have been omitted from this discussion as we lack adequate firsthand observations. Discussion of theories is omitted for the reason that at the present time they are legion and no one has overwhelming support.

(To be continued.)

American Medical Biographies

COOPER, THOMAS (1759-1839).*

THOMAS COOPER, for twelve years president of the University of South Carolina, naturalist, politician and writer, was an Englishman who believed in individual thinking and free speech, a stormy petrel who found it best to flit to the land of the free and settle in Pennsylvania in 1795. He was born in London, October 22, 1759; was educated at Oxford, and subsequently studied law and medicine, receiving the M.D. degree. He was admitted to the Bar and travelled a circuit for a few years. Being sent to France by the democratic clubs of England to similar clubs there, he sided with the Girondists and was called to account for this by Mr. Burke in the House of Commons, Cooper replying with a violent pamphlet. While in France he learned to make chlorine from common salt, and on his return became an unsuccessful calico-printer at Manchester. He established himself as a lawyer in Pennsylvania in 1795, allied himself with the Democrats and attacked President Adams in a newspaper article in 1799; was tried for libel and sentenced to six months' imprisonment and a fine of four hundred dollars. A little later he was made a judge in Lucerne County, but was removed for arbitrary conduct in 1811. As a personal friend of Thomas Jefferson he supported his administration and the administrations of Madison and Monroe. He became professor of chemistry in Dickinson College and then was elected professor in the newly established University of Virginia, but was soon forced to resign, because of his religious views. This was previous to December 3, 1819, when he was selected to succeed Professor E. D. Smith in the chair of chemistry in the South Carolina College at Columbia, then fifteen years old and having a faculty of five and a student body of one hundred. In two years, on the death of President Macy, Dr. Cooper took his place and continued in office until 1833. He was almost idolized for his genius and learning; he lectured on chemistry and on political economy;

felt qualified to teach metaphysics but thought it "not worth the time required to be bestowed upon it." Almost from the beginning he had difficulty with discipline. The students misbehaved and rebelled against established order, an attitude with which Cooper might have been sympathetic, because of his own past, but was not. The college was in a turmoil during his incumbency. J. Marion Sims graduated here in 1832, and says of Cooper: "He was considerably over seventy, a remarkable looking man, never called Dr. Cooper but "Old Coot," a name applied to a terrapin, and the name suited him exactly." He was less than five feet tall and had an enormous head. To him it attributed the suggestion of establishing a medical college in South Carolina, a project that Samuel Henry Dickson finally saw to fruition. Cooper was an ardent free trader and an advocate of state rights, publishing anonymously a clever allegorical sketch entitled "Memoirs of a Nullifier," in 1832. In the previous year he had attacked Professor Silliman's views on geology in a lecture to his class, Silliman of Yale and he being at that time the only two lecturers on this subject in the country. Silliman's syllabus of lectures was "founded on the Mosaic account of the foundation of the earth and of the Deluge, as being delivered under the authority of divine inspiration." Furthermore, Cooper published a pamphlet on the connection between geology and the Pentateuch, that gave great offense. Finally his connection with the college was severed by reorganizing the faculty, dropping his name, but at the same time conferring on him the degree of LL.D.

The rest of his life was spent in Columbia, South Carolina, in the revision of the statutes of the State, five volumes having been published at the time of his death, May 11, 1839.

Dr. Cooper possessed great versatility and wide knowledge, displayed as a lecturer and writer. He was an admirable talker. Some of his best known writings are: "Tracts on Medical Jurisprudence," 1819; "Lectures on the Elements of Political Economy," Charleston, 1826; "Observations on the Writings of Thomas Priestley," 1826; "Foundation of Civil Government" and "On the Constitution of the United States." WALTER L. BURRAGE, M.D.

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RECENT STUDIES OF GAS GANGRENE.

THE study of gas gangrene, as it has appeared in different stages of the war, and under different conditions, has produced some conflicting results. In their exhaustive treatise, *La Gangrène Gazeuse* (1918), Weinberg and Seguin call attention to the miscellaneous class of organisms usually associated with gas gangrene, and one of the primary purposes of their researches is to clear away the confusion which at presents exists in this branch of bacteriological observation. The results show clearly that the etiology of gas gangrene is extremely complex, the complexity arising both from the variety of associated bacteria and the difficulty of tracing the relation between single species and the disease. Though it would appear that *B. perfringens* is so commonly found as to be a characteristic, the probability is, if we examine the whole evidence, that this organism is not the real cause. Another result of

these studies is the finding of specific differences between bacteria usually regarded as the same. The bacillus of malignant oedema, for example, and the *Vibrio septique* of Pasteur which some authors consider as identical have proved on sufficiently exact investigation to be different organisms. It is true that opinions differ as to this distinction. Thus, Calo in the *Policlinico* of June 15, 1918, believes that the bacillus of malignant oedema and the *Vibrio septique* are the same. But, according to Weinberg and Seguin, the identification is faulty, being based on insufficient evidence, and this opinion is borne out by recent German investigations. The infectious agents of gas gangrene are still imperfectly understood, but it seems likely that six species of anaerobes and two species of aerobes must be looked for as the causes of the gas and putrefaction of wounds.

This seems to be the most precise way of stating the matter, for gas gangrene is remarkable as an example of a transitional form of disease for which few analogies can be found. Thus E. Fraenkel observes (*Deutsche. med. Wochenschrift*, 1918, p. 759) that in true "Gasbrand" there is a fulminating destruction of the muscles with the production of gas and little or no oedema, while in malignant oedema there is only a very small production of gas with considerable oedema. The bacteriology of the two forms of disease is also different. In malignant oedema Fraenkel found *B. welchii*, which was obtained in pure culture by using Zeissler's human blood-glucose-agar plates and incubating under anaerobic conditions. The precise part played by this organism in gas gangrene is not clear, though it appears to be fully established that in gas gangrene and in malignant oedema there is always more than one infective agent.

Frene hantors, like Saequépée and Weinberg and Seguin, state that the anaerobes are the cause of the gangrene, which, so far, is not clearly understood, while the toxins in the circulation produce the constitutional symptoms. Saequépée (*Presse médicale*, April, 1918) found *B. perfringens* in 82 cases, *Vibrio septique typique* in 28, *Vibrio septique atypique* in 11, and his *B. bellonensis* in 35; and he adds that in nearly all cases typical and atypical *Vibrio septique*, and *B. bellonensis* are found in symbiosis. Weinberg and Seguin give a more complete classification, the result of cultures and clinical experiences with anti-perfringens and polyvalent sera and anti-toxins. In true gas

gangrene there are always several species of bacteria present, of which the chief are *B. perfringens*, *B. oedematiens*, *Vibrio septique*, *B. fallax*, *B. aerofetidis*, *B. sporogenes*, and the aerobic *B. coli* and *B. proteus*.

R. Pfeiffer and G. Bessau (*Deutsche. med. Wochenschrift*, 1917, pp. 1217, 1255, 1281) have endeavored to identify these organisms. In an article on the Bacteriology of Gas Gangrene they regard the disease as due to the combined action of a variety of anaerobic bacteria, and never as the result of a single variety. In 150 cases from the Somme battlefield Fraenkel's bacillus (*B. aerogenes encapsulatus*) was the most common, but was never present alone. They emphasize the difficulty of obtaining pure cultures of any of the anaerobes, and this, it is well known, has been the universal experience. It is to be noted that *B. perfringens* is identified with *B. aerogenes encapsulatus* of Welch and Nuttall, while the *Vibrio septique* has been identified by Weinberg and Seguin as the bacillus of Ghon and Sachs and von Hübner.

Into this confusion of nomenclature Pfeiffer and Bessau have certainly introduced some needed clarity. They have narrowed the field of investigation considerably by describing four organisms in detail. Two are classified as "putrefiers," and two as "non-putrefiers." The non-putrefiers are: (1) The bacillus of Fraenkel, identified with *B. welchii*, *B. perfringens*; and (2) the bacillus malignant oedema of Koch. The first is the most common.

Of the putrefiers the most important is the so-called "Uhrzeiger" or "clock-hand" bacillus. It is very common, is mobile, Gram-positive, spores abundantly, producing gas and a foetid odor. The characters are those of the *B. sporogenes* of British writers. The fourth organism is Par-oedem bacillus of German authors which produces much putrefaction; it is non mobile, and forms spores. In addition Pfeiffer and Bessau found a variety of unidentified species. Their conclusion agrees with that of other writers that gas gangrene and malignant oedema are never caused by one type of bacillus. Thus, in the cases of malignant oedema described by Weinberg and Seguin, cultures were often contaminated with *B. sporogenes*, so that the distinction between gas gangrene and malignant oedema seems, in the last analysis, to be a form of transition.

The cause of the toxic or constitutional symp-

toms is generally regarded as *B. perfringens* sometimes as *B. oedematiens*. On this principle Weinberg and Seguin prepared their anti-perfringens serum. Judging from the cases in their book it appears to be distinctly beneficial. These facts furnish a tolerably fair test of the number and variety of the bacteria which a given case of gas gangrene represents. After reading the most recent European literature, including the German, we find it impossible to resist the impression that these researches have considerably simplified the task of finding the true agents of the disease. The most important certainly seem to be *B. perfringens* and *B. sporogenes*, although the flora of gas gangrene varies with soil and climate. Hence it manifests different characters in Italy, Germany, and on the Eastern fronts. The difficulties of the subject are greatly increased by the unnecessarily voluminous and misleading nomenclature which encumbers this branch of bacteriology. The habit of giving several names to the same organism is a fruitful source of error and confusion, while it makes bacteriological examinations much more complicated than is desirable for the practical routine of field work.

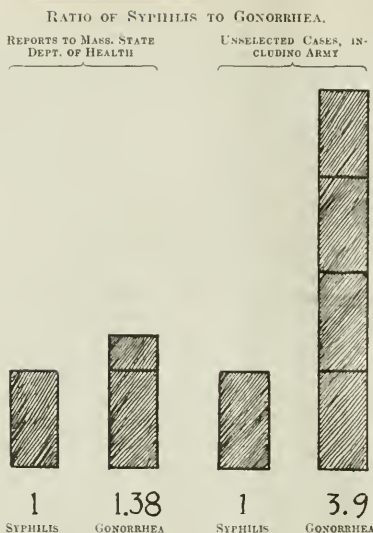
COMPARATIVE PREVALENCE OF SYPHILIS AND GONORRHEA.*

WE present herewith the total figures on the reporting of gonorrhea and syphilis to December 1, 1918, with an analysis month by month:

	GONORRHEA	SYPHILIS	TOTAL
February	47	16	63
March	982	376	1358
April	835	415	1250
May	787	334	1121
June	815	330	1145
July	750	285	1035
August	828	360	1188
September	689	298	987
October	552	233	785
November	771	365	1136
	7036	3012	10048

To interpret these figures certain facts may well be borne in mind. While the regulations requiring the reporting of venereal diseases went into effect February 1, the blank forms for such reporting were not in the hands of all physicians before the latter part of March. This fact undoubtedly accounts for the sudden rise

* Arphenamine can now be supplied by the State Laboratories in amounts sufficient to control infectious cases of syphilis. Distribution is made through the nearest State-approved clinic, with the approval of the chief of clinic.

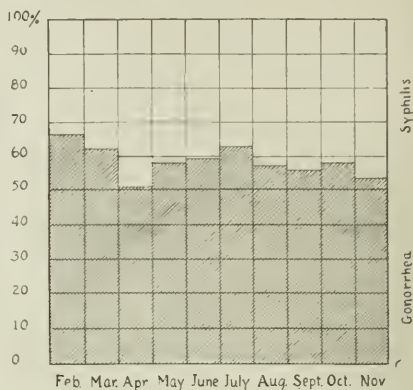


in the number of cases reported during the early months, together with the fact that cases which had been under treatment with a certain physician for an unknown period were first reported at the time of his receiving blank forms. Again, the September and October figures were undoubtedly affected by the influenza epidemic, which was at its height in Massachusetts during these months.

Analysis of these figures with regard to the ratio between syphilis and gonorrhea leads to some interesting deductions, as may be seen by the accompanying chart.

Conclusions based upon the reports of cases of syphilis and gonorrhea would indicate that syphilis exists in a community in a ratio to gonorrhea of 1:1.38, whereas estimates based upon the reports of the examining boards of the draft army, constituting a cross-section of the young male population, would indicate that syphilis exists in a ratio to gonorrhea of about 1:4. The Army reports are unique in that they give the first evidence available in history of the prevalence of these two diseases, considered either jointly or separately. A report of a number of women patrol officers, working on the streets and in public parks, who have been securing examination of cases which might be assumed to have contracted one or the other disease, shows a ratio of syphilis to gonorrhea of 1:3.1. A similar ratio is borne out in the experience of the Subdivision of Venereal Dis-

MASSACHUSETTS—PER CENT. OF SYPHILIS AND GONORRHEA AS SHOWN BY CASES REPORTED FROM FEB. 1, 1918, TO DEC. 1, 1918.



Average Ratio—Syphilis : Gonorrhea :: 1 : 1.38.

eases of the State Department of Health in cases referred as possible sources of infection from the Army and Navy. The proportion in these cases has been 1:4.6.

The reasons for the discrepancy between the ratio found in the Massachusetts reports of the two diseases and that shown under the other circumstances cited, wherein the cases were unselected, are numerous and some of them are worthy of consideration. We note a few:

1. The greater importance attached to syphilis as a disease by the average physician leads him to report his case more uniformly.
2. The greater promise of results in the treatment of syphilis as against gonorrhea, with the attendant interest in a comparatively new therapeutic field, such as is offered by arsphenamin treatment, leads to greater interest on the part of the profession.
3. The fact that gonorrhea is more often self-treated or treated over the drug counter.
4. The patient's greater fear of the effects of syphilis leads him to apply for treatment in a relatively larger number of cases. In addition to the inherent dread of syphilis, the educational drive has been carried on with far more vigor with regard to syphilis than has been done in the case of gonorrhea. The impression that gonorrhea is "no worse than a cold" is far from eliminated from the public mind in spite of the recent advance in popular education on these subjects.

The fact that the large clinics and institutions are reporting cases of syphilis only during their period of greatest infectivity would also militate against the correctness of conclusions drawn from figures as they stand today. Any inaccuracy due to this cause, however, would obviously tend to decrease rather than increase the apparent disparity between conditions as they may be surmised to exist and as reflected by reporting figures.

This discussion is presented with a view to stimulating further investigation of existing conditions and not in any sense as evidence of the incidence of these diseases.

THE CONTROL OF VENEREAL DISEASES.

THE importance of venereal diseases as a cause of suffering and inefficiency is not fully recognized by the medical profession. Until the selective service law went into effect we really had no statistics regarding these diseases. As a result of the examinations made under that law we now know that about 2.4% of the white, and 6.6% of the colored men examined were found to be infected with gonorrhea.

Among the men coming from New England the following percentage were found to be suffering from venereal diseases: Rhode Island, 2.6%; Maine, 1.8%; Massachusetts, 1.7%; Connecticut, 1.3%; Vermont, 1.5%, and New Hampshire, 0.3%. Although the conditions in New England appear to be better than in many of the other states, these figures indicate that we have a serious venereal problem which must be dealt with fearlessly and efficiently. In considering these statistics it must be remembered that these men actually had the disease at the time of arrival at camp. Data as to the number of men who had previously been infected are not now attainable.

To deal successfully with a disease we must know its extent and the distribution as well as the mode of transmission. Fortunately, in the diseases under discussion we know the exact mode of transmission, but we do not know how widely they are distributed. However, the members of the medical profession have exact data upon this subject and the patriotic physician can do no better service for the country

than by fully coöperating with the health authorities in reporting these cases.

Venereal diseases are spread by chronic carriers and once we know the carriers we should by proper methods of treatment be able quickly to rid the community of a large number of foci of infection.

The results obtained by the intensive treatment given these cases in the Development Battalion of the Army have shown that we can hope by proper treatment to clear up most of the cases. The second step in the campaign is therefore the establishment of a sufficient number of properly equipped dispensaries where such cases can be properly treated.

The third step in the campaign is education. This must be given to the parents and teachers of the coming generation. We can not hope for very much from the men and women who have already contracted bad habits of sexual indulgence. There is, however, great hope for the coming generation if instruction in self-hygiene be given in a proper way and at the proper time. Our great aim now should be to give to the parents the knowledge that will enable them properly to instruct their children. We want the children to know the beauties of creation, deprived of their glamour and false modesty. Above all, each child should be taught self-restraint and self-reliance.

THE EPIDEMIC OF INFLUENZA IN BOSTON.

IN the September issue of the *Monthly Bulletin* of the Health Department of the City of Boston, Health Commissioner William C. Woodward reviews the epidemic of influenza which occurred in the summer. The report includes, also, an interesting survey of previous outbreaks of influenza in this and in foreign countries. The first definite historical record of influenza is that of the pandemic of the disease, which prevailed in Europe in 1510. From the many detailed descriptions of its clinical aspects, it is evident that the type of influenza in that pandemic was strikingly like that now seen in this country; the mortality was comparatively high; pneumonia was frequent, presenting the same features as the pneumonias in the present epidemic; and a tendency towards bleeding from the nose and lungs is recorded, an accompaniment of the disease which has not been particu-

larly noted in more recent epidemics prior to the present one. From the time just named, well recognized epidemics of influenza have spread over the world at irregular intervals. In the eighteenth century, a severe epidemic prevailed in Europe in 1743, which reached America in 1761. In 1761 and 1762, epidemics occurred in portions of Europe which had previously escaped. Twenty years later, in 1781 and 1782, the disease again appeared in Asia and in Europe, and during 1788 and 1789 epidemics occurred in Europe and again extended to America. Pandemics, extending to America occurred in 1802-03, in 1830-33, in 1836-37, in 1847-48, and in 1889-90, with more or less epidemic prevalence of the disease in 1850-51, in 1855-58, in 1874-75, and for several years following the outbreak in 1889.

Speaking of the epidemic of 1918 in Boston, Dr. Woodward states that as early as the autumn of 1917, indefinite reports of the prevalence of influenza in epidemic form in certain parts of Europe began to filter through the military censors, and by the beginning of the summer just past it had become evident that the disease in epidemic form was prevailing or had occurred in Spain, France, Switzerland, Germany, Great Britain and Ireland, and to a considerable extent in both armies on the Western front. Judging from reports which have reached us from military hospitals in Europe, the prevailing type of the disease was not particularly severe, and the tendency to pneumonia and death was not especially marked, except, according to one report, where the sick were crowded together.

About the first of July of the current year, convalescent cases of influenza began to be seen more or less frequently among members of the crews of transports and other vessels arriving in Boston from European ports. There is no evidence, however, to show exactly when the epidemic began in Boston. The disease was not made reportable by the State Department of Health until October 4, 1918, long after the presence of the disease had been well recognized. Case reports are not available, therefore, to show when influenza first appeared.

Public attention was first directed to influenza in this vicinity by the apparently sudden appearance during the week ending August 28 of about fifty cases at the naval station at the Commonwealth Pier, and during the next two weeks over 2,000 cases occurred in the naval

forces in the First Naval District. Of the patients removed to hospitals, over 5 per cent. developed broncho-pneumonia, with a mortality of over 60 per cent. in such cases. To what extent, if any, cases of influenza had been occurring at the Commonwealth Pier or at other stations in the First Naval District prior to the appearance of the cases the week of August 28, no information is at present available. A sudden and very significant increase reported the third week in August in the number of cases of pneumonia occurring in the army cantonment at Camp Devens in this district seems, however, to justify a suspicion that an influenza epidemic may have started among the soldiers there even before it appeared in the naval forces.

The outbreak of influenza in the naval force at Commonwealth Pier was followed in less than a week by similar sudden outbreaks both in the aviation schools and among the naval radio men at the Institute of Technology, in Cambridge. Curiously, the early cases seemed to be more prevalent among the men living outside than among those quartered in the barracks at the Institute. The incidence of the disease here was apparently somewhat higher than at the Commonwealth Pier.

A record of the number of cases and deaths from September 7 to November 9 shows a total of 997 cases of lobar pneumonia, 3,399 of influenza; 942 deaths due to pneumonia in all forms, and 3,430 from influenza, giving a total of 4,372 deaths.

This bulletin includes, also, a discussion of the cause of influenza, advice as to care of patients and the prevention of influenza and pneumonia, and a record of the regulations and orders issued for the prevention of the spread of influenza.

SCIENCE AND MEDICAL TEACHING.

At a meeting held at Harvard Medical School on December 16, 1918, Professor Graham Lusk delivered an address showing the value of scientific observation and experiment and its relation to medicine. The prophets of the past have pointed the way to present growth and future achievement. The French master, Lavoisier, conceived the scientific method as a law which demands procedure only from what is known to what is unknown, resulting in a conclusion which

is an immediate consequence necessarily flowing from observation and experiment. This mental attitude is characteristic of the present day, particularly in its relation to medicine.

The universities of Cambridge and Oxford, founded at a time when authority was worshipped, studied at first hand the unknown culture of a bygone civilization, after the revival of learning in Italy in the 15th and 16th centuries. Galileo and Harvey were persecuted because they preferred to trust their own observations rather than accept the teachings of authorities. The founding of the Royal Society of London in 1660, however, afforded protection and support to investigators, whose minds, liberated by the age of historical research, were then free to start upon a course of experimental observation.

The first half of the 19th century was a brilliant era in French science, producing Lavoisier, Magendie, the founder of experimental physiology, and Claude Bernard, his most distinguished pupil. Not until 1850 did Germany fully disassociate science from speculative philosophy and enter the field of scientific progress. The marvelous growth of German science since that time has been the admiration of the world. It may be said to have passed through two stages: a first stage, that of the study of science for the love of finding out the truth; and a second stage, the study of science, because—in the words of a German professor—"pride in a scientific reputation as an incentive to ambition is not to be underestimated." Germany's progress in the past has been considerable, and we must continue to recognize her scientific achievement.

In America, medical education in this country was advancing rapidly before the war. Men have been inspired by the love of searching for understanding regarding the complex processes of life in health and disease. Though the capacity for discovering new things may not be given to all, yet all should have the training which comes from an environment such as that existing in the Harvard Medical School, where the students are educated by men whose lives have been illumined by creative thought.

The war brought a temporary halt to promising activities in this country; yet, in many lines, the war has also developed much that is of great value to the nation and medical science. Now is the time to take up the work where it was left at the outbreak of the war. The laboratories of the country's medical schools offer present

opportunity for the future advancement of knowledge. The men of England and the men of France have fought for four long years; ours for four months. The young physicians of America of the present generation have the obligation and may, perhaps, deserve the credit of establishing in the days to come the dreams for medicine of Magendie, and of Claude Bernard, thus insuring a notable scientific era in this great land of ours. Only thus can medicine progress; only through observation and experiment can the world grow in wealth of knowledge.

FOUR HUNDREDTH ANNIVERSARY OF THE FOUNDATION OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE *British Medical Journal* in one of its recent numbers has called our attention to the four hundredth anniversary of the foundation of the Royal College of Physicians of London. Henry VIII., who granted the charter for this college on September 23, 1518, was prompted by the example of similar institutions in Italy and elsewhere. On the advice of Wolsey and of Thomas Linacre and others of his physicians, a college consisting of eight persons was instituted which had for its object to improve and regulate the exercises of the art of physic. These eight men had power to select a president annually from among themselves and as vacancies occurred in their numbers they were to choose "the most cunning and expert men" as successors. At this time it was not permitted that any person except a graduate of Oxford or Cambridge should practice physic throughout England unless such person be first examined and approved by the president and three of the "elects" of this institution. For nearly one hundred years thereafter the meetings of the College were held at Linacre's own home, a small house in Knightrider street, the front portions of which were used as a council room and library. In 1851, however, these premises were enlarged and in 1853 lectures were delivered by Dr. Caldwell and Lord Lunley in a large added theatre. Shortly after, a botanical garden under the direction of Gerard was secured and from then on the steady growth of the College gradually required larger surroundings. The last meeting in the old building was held on June 25,

1614. Linaere, the founder, was president until his death in 1524. He was learned as a physician and as a scholar and his successors during the first hundred years include among their number many names now famous: Clement, professor of Greek at Oxford; Wotton, the zoologist; Caius, linguist, critic, physician, naturalist, second founder of Gonville, and Caius College, Cambridge, antiquarian and designer of the insignia of office still used by presidents; and William Gilbert, author of "De Magnete" and first physicist of the college. August 23, 1614, was the date of the first meeting in the new college and in April, 1616, Harvey delivered the Lumleian lectures and two years later the first pharmacopœia Londinensis was issued by the college. Then came a period of great distress caused by the Civil War. It was feared that the College must be sold at auction; but Dr. Baldwin Hamley averted this by purchasing the house and garden himself and returning them two years later to his colleagues. In 1653-4, through the generosity of Harvey, a museum of valuable contents and a library of medical books, treatises on geometry, geography, astronomy, music, optics, natural history and travels was added to the college. In 1657, after the death of Harvey, another period of depression occurred and in 1665, during the great plague, most of the Fellows and officers fled the city, thieves emptied the treasury and on September 5, 1666, the London fire consumed the whole of the college buildings and the few valuables which were saved were not placed again in a home until the building in Warwick Lane, designed by Sir Christopher Wren, was opened in 1674. Here for one hundred and fifty years this stately building, consisting of an anatomical theatre, library, coenaculum, censor's room and botanical garden was occupied by the Royal College of Physicians. But even these buildings were not destined to be permanent and, in 1825, through the influence of Sir Henry Hallford, a grant of land was obtained and the present building designed by Sir Robert Smirke, was erected and opened on June 25th. The Warwick Lane premises were sold for £9,000, but the names of such men as Mayerne, Glisson and Sydenham, exponents of clinical medicine, followed by Radcliffe, Garth, Arbuthnot, Freind, Sloane, Meade and William Heberden have not disappeared with the old buildings, and they are constantly recalled to our minds as men who became famous in the history of medicine.

MEDICAL NOTES.

BRITISH MEDICAL SERVICE IN ITALY.—A dispatch of General the Earl of Cavan, K.P., K.C.B., Commanding-in-Chief British Forces in Italy, dated November 15th, 1918, contains the following reference to the medical service:

"The fresh influenza epidemic, which broke out shortly before the commencement of the operations, threw a heavy and additional strain on the medical service. Despite this the evacuation and care of both the sick and wounded was rapidly and satisfactorily carried out. All the arrangements were most ably organized by my Director of Medical Service, Major-General F. R. Newland, C.B., C.M.G."

The following note is made of the good work done by the British Red Cross Society.

"In their retreat the Austrians left many hospitals full of sick and wounded of all nationalities behind them. In many cases these hospitals were bereft of provisions and attendants. The British Red Cross, under the supervision of Colonel Sir Courtauld Thompson, K.B.E., C.B., spared no efforts to alleviate the sufferings of the inmates, and undoubtedly saved the lives of many Austrian as well as Italian patients."

INFLUENZA IN FORTY-SIX LARGEST CITIES.—The recent influenza epidemic caused 111,688 deaths in the forty-six largest cities and increased the combined death rate for those communities in 1918 to 19.6 per thousand.

Baltimore, with 26.8 per thousand, had the highest rate of the registration cities, while St. Paul, with 13.9, had the lowest.

There were 442,374 deaths in the forty-six cities, the estimated population of forty-two of which aggregated 20,514,520. There was no estimate of population for the other four. Deaths from influenza totalled 60,439, with 42,149 deaths from pneumonia.

The year's total death rate in New York city was 18.8 per thousand, compared with 15.2 for 1917. In Chicago it was 17.1, against 14.9 the year before and in Philadelphia 24.2, compared with 17.1 in 1917. In Cleveland it was 16.0 for the last year and 13.9 in 1917; Boston 22.0 and 16.4; St. Louis, 17.6 and 15.1.

WAR RELIEF FUNDS.—On January 8, the totals of the principal New England War Relief funds reached the following amounts:

Belgian Fund	\$726,511.47
French Wounded Fund	465,941.39
French Orphanage Fund	423,304.49
Italian Fund	265,253.55
Lafayette Fund	45,543.41

ACTIVITIES OF INSECTS DURING THE WAR.—

It has been reported that of the insects responsible for the death of many in the war zone, the louse has been the most deadly, and has caused the death of at least a million persons. In Serbia alone typhus, a louse-borne disease, infected nearly 1,000,000 persons and killed 500 a day in the little city of Jassy, while 200 of the 1200 medical officers in the country, died from the disease. This disease spread over Russia, Austria, Germany and the Balkans generally.

Lieutenant Lloyd, chief entomologist in northern Rhodesia, is reported to have made the following statements:

"Typhus, one of the most dreadful epidemic diseases of man, is due entirely to the activities of lice. The same remark applies to relapsing fever over the greater portion of the world. Still a third disease, trench fever, has been placed to the credit of the louse, and possibly even now the full extent of its guilt is not known."

In speaking of conditions during the typhus outbreak at the Wittenberg camp in Germany, he said:

"The Germans know as we do, that typhus is spread by lice, and that the epidemic could have been cut short and stamped out a week after its commencement by the disinfection of all prisoners. One of the few good points about insect-borne diseases is that they are entirely preventable, if preventive measures are taken in time and carried out in a thorough manner."

BIRTHRATE OF GERMANY AND AUSTRIA DECREASED BY WAR.—The birthrates of Germany and of Austria have been seriously decreased by the war. Through loss of man power, and a shortage of births to the number of about 3,000,000, Germany's population has been reduced from her normal population of about 72,000,000 to approximately 64,000,000. In Austria, the population has been reduced by nearly 8 per cent. decrease from the population in 1914. In Hungary, the situation is even worse, with almost a 13 per cent. decrease.

Meanwhile, despite the losses which England has suffered in the war zone, the British population has been growing. By the middle of 1919 this population will be only 3 per cent. lower than it would have been without war. Great Britain in 1919 will have a larger population than in 1914.

The rate of increase in the United States has not been affected at all.

BRITISH PRAISE FOR AMERICAN PHYSICIANS.—

Army medical officers now in France, whether with the expeditionary forces or serving with the British, are rendering distinguished service. A letter from a British Medical Officer, Lieutenant General Goodwin, says that "the work of these U.S.A. medical officers deserves special recognition. They have been invaluable and have worked under the most trying conditions with great gallantry."

PNEUMONIA IN CAMPS TO BE STUDIED.—

The War Department has organized a board, consisting of Colonels Beane C. Howard, Frederick F. Russel, Victor C. Vaughan, Lieutenant-Colonel William C. Welch, of the Medical Corps, and Surgeon Rufus Cole, U.S.A., for the purpose of investigating the nature, causes, prevention, and treatment of pneumonia in the military camps. It is probable that during next summer and fall the Army Medical Department will have to take care of as many men as it did last year, and it is hoped that the work of the board will produce good results.

No large army before has had so low a death rate from disease as that of the present armies of the United States. Deaths from typhoid fever have been negligible.

The most prevalent disease has been measles, not usually a fatal malady, but the precursor of pneumonia and meningitis, which have caused nearly two-thirds of all the deaths in camps and cantonments. All other diseases were relatively so small in number that the secretary of war was led to say that, excepting measles and the diseases following it, the health of the camps was excellent.

PREVENTING THE INTRODUCTION OF COMMUNICABLE DISEASES BY RETURNING SOLDIERS.—In a recent issue of the United States Public Health Service Report, the plans for preventing the introduction of communicable diseases by returning soldiers are outlined. Now that the soldiers

are about to return from overseas, health officers throughout the country will have to exercise the greatest vigilance in order that exotic epidemic diseases may not be carried into this country and spread with disastrous results. Among the hundreds of thousands of returning soldiers a number may exist, probably will exist, who will be carriers of diseases ordinarily not prevalent in this country, or not prevalent in that part of the country to which the soldier returns. Among the diseases especially to be feared are cholera, typhus and plague.

The danger is by no means imaginary, hence explicit instructions have been issued to all quarantine officers, urging the most careful examination, including laboratory tests, of all units liable to be carriers of these diseases. In addition to this, officers of the Public Health Service trained in quarantine procedure either have been sent to various ports of Europe or will be sent as the occasion may arise. There they will supervise the enforcement of the United States quarantine regulations applicable at foreign ports against ships and passengers destined for ports of the United States.

The plans now being worked out include a careful medical examination of all the soldiers prior to embarkation, delousing of all the clothing and other infested materials, the holding of suspicious cases for a period of observation and examination, in short, all measures needed to insure that no cholera, plague, typhus, trench fever, or other exotic disease is introduced into this country.

In the opinion of competent observers there is little danger of the introduction of cholera from the soldiers now in France and Germany. On the Russian front, however, conditions are by no means so satisfactory, for the country is still in a chaotic condition and cholera has been known to be prevalent in various sections. It is from this quarter, also, that the possibility of the introduction of plague must be considered.

Somewhat similar precautions will be taken to prevent, or at least minimize, the spread of disease by soldiers discharged from training camps.

Altogether, the coming few years will be very busy for health authorities everywhere, and it is to be hoped that the public will realize the need of giving them the greatest possible support and coöperation.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending January 4, 1919, the number of deaths reported was 488 against 298 last year, with a rate of 31.95 against 19.81 last year. There were 37 deaths under one year of age against 49 last year.

The number of cases of principal reportable diseases were: Diphtheria, 71; scarlet fever, 24; measles, 7; whooping cough, 18; typhoid fever, 1; tuberculosis, 44.

Included in the above were the following cases of non-residents: Diphtheria, 9; scarlet fever, 1; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever 1; measles 1; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 1.

FREE HOSPITAL FOR WOMEN.—The Free Hospital for Women, Boston, offers treatment to women without means, and is supported by donations from benevolent individuals, and by contributions from churches and religious societies. The forty-third annual report, issued for 1917-1918, shows that 1,091 patients have been admitted. Two thousand, one hundred and forty-seven operations have been performed during the year. The Out-Patient Department has cared for 6,343 women. Sixteen nurses were graduated from the training school.

THE BROCKTON HOSPITAL.—The twenty-second report of the Brockton Hospital for 1917 describes the hospital service which has been rendered during the year. One hundred and forty-four patients have been admitted and have received a total of 3,325 weeks' and one day's treatment. The Out-Patient Department has cared for 605 persons, to whom 1,738 treatments have been given. There have been 139 deaths. The additions to the nurses' *Rosa Cottage* and the superintendent's home have been completed and have relieved congestion so that better hospital work has been possible. A new ward, for which \$158,000 has been raised, is being completed. There have been no material changes in the x-ray department. During the past year 712 plates have been taken on 410 ward and out-patients.

The training school course has been extended to cover three years. There has been an average

of twenty-two pupil nurses in training throughout the year.

Foremost among the year's achievements may be mentioned the splendid arousing of the people of Brockton and its vicinity to the relief of a civic need, and the broadening consciousness apparent among the members of the corporation and staff of their opportunities for service to the community.

MASSACHUSETTS GENERAL HOSPITAL TRAINING SCHOOL.—The graduating exercises of the Massachusetts General Hospital Training School for Nurses were held on the evening of January 14, 1919, at 8 o'clock, in the Moseley Memorial Building on Fruit street. An address was delivered by Hon. Henry van Dyke, Lieutenant-Commander, U.S.N.R.F. A reception was held from 9 to 11 o'clock.

SUPPLY OF NURSES NOT SUFFICIENT TO MEET DEMAND.—Owing to the recurrence of influenza, the demand for nurses has been unusually great, and for the last three weeks it has been impossible to secure enough nurses in answer to the calls which have been made for them. Inquiries at various registries for nurses in Boston and its vicinity show that many more nurses could be used if they were available. Some of the registration offices are sending out volunteer nurses who have been secured from the State House. The reports which have been received of their work show that these volunteers are rendering valuable service, although the registry offices do not stand sponsors for them and send them out with that understanding.

A plan has recently been voted by the Mayor's emergency health committee to establish a permanent salaried force of municipal nurses and aids. They are to be under assignment of the city health authorities and are to be paid by the city if the patients they are attending are unable to pay them. The influenza epidemics have shown the inadequacy of the system under which the city depends upon the district nursing association for nurses. The city's calls upon the association for nurses have repeatedly found no nurses available. The new plan aims to have a corps of trained attendants always at the command of the city for assignment only to cases of the most urgent kind.

FURTHER PLANS OF THE HEALTH DEPARTMENT.—Measures for combating influenza are

being constantly extended. Dr. Eugene R. Kelley, State Commissioner of Health, has recommended to Governor Coolidge that a special appropriation of \$5,000 be made for further experimentation with the serum which a commission of experts appointed by the State Health Department views as a promising remedy. The appropriation would be expended for the instruction of physicians in the methods of treating influenza lobar pneumonia patients with this serum.

The Commission has reported that the mortality at the naval hospital in influenza lobar pneumonia cases was markedly lower following the introduction of the serum treatment and that the mortality in serum-treated cases at the Naval Hospital was much lower than among patients at Camp Devens who were not treated with the serum. The comparison was based upon groups of similar numbers and ages.

Commissioner Kelley suggests that the best way to test the serum is to train a corps of doctors in the methods of the serum treatment and send them to hospitals through the State where they can instruct local physicians.

MASSACHUSETTS HOMEOPATHIC SOCIETY.—The annual meeting of the Boston Chapter of the Massachusetts Homeopathic Society was held in Boston recently. The principal address was by Dr. Thomas J. O'Brien, who discussed the influence of influenza upon the heart.

The following officers were elected for the coming year: Dr. Wilson T. Phillips, president; Dr. Ernest M. Jordan, vice-president; Dr. Albert W. Horr, second vice-president; Dr. Clifford D. Harvey, secretary; Dr. Thomas M. Strong, treasurer.

REQUEST TO ST. LUKE'S HOSPITAL.—By the will of William Thompson of New Bedford, \$3000 has been bequeathed to St. Luke's Hospital in New Bedford, and \$1000 to the New Bedford Instructive Nursing Association.

INFLUENZA IN MILTON AND WHITMAN.—In Milton 110 cases of influenza and 4 deaths have been reported during the month to the Board of Health. There have been 2 deaths from pneumonia. In October, when the disease became reportable, there were only 46 cases, and in November there were 32. No decision has been reached concerning the closing of schools or churches.

In Whitman, it has been decided not to open the schools until December 30. Conditions are improving, and on December 15, only 21 cases of influenza were reported, although there were several cases of pneumonia and 1 death.

INFLUENZA EPIDEMIC.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—Health Commissioner Woodward has issued a statement that the number of influenza cases reported daily, which show an increase over reports of a week ago, do not furnish a reliable basis from which to judge whether influenza may be increasing or decreasing, and that the daily report showing 672 new cases and 26 deaths, taken in connection with other sources of information, indicate that the disease is not advancing at an alarming rate. Cases are more numerous than they were a week ago, but the deaths are so comparatively few that the department has not seriously considered the closing of theatres, churches, schools, dance halls, and other places of assembly.

In speaking of the work of the Health Department, Commissioner Woodward is reported to have said in part:

"The Health Department has from the very first looked upon influenza as a disease spread by the secretions from the noses and throats of persons suffering from influenza, whether with a knowledge of their condition or not, and has endeavored as the only recognized rational method of preventing the spread of the disease to limit the spread of such secretions.

"To prevent the spread of nose and mouth secretions, the health department has proceeded along three lines: First, it has made an effort to educate the public as to the danger of crowds and of mouth secretions, and how to avoid such dangers. Second, it has endeavored to enforce, and to stimulate the enforcement of the anti-spitting statute, directly and through the police department; and it has promulgated and is enforcing a regulation requiring the adequate cleansing of glasses, cups and other utensils that the public mouths in public eating and drinking places. And third, it has made an effort to diminish by direct action the number and intimacy of personal contacts, by trying to provide more air space and better ventilation for passengers on the Elevated and in surface cars, and by closing schools, movies, saloons, and

other places where intimacy of contact was more or less marked.

"The educational work of the Health Department has been carried on in part through the public press, and in part through posters and placards and leaflets that have been widely disseminated in English, Italian and Yiddish. The distribution of such posters, placards and leaflets is still going on.

"Another method resorted to by the Health Department to teach the danger of the secretions from the nose and mouth, and to teach methods of avoiding such danger, has been the sending of physicians and nurses into the homes of such patients as have been reported as suffering from influenza, to instruct such patients and those in attendance on them as to the precautions best calculated to limit the spread of infection.

"The increased vigor of the enforcement of the anti-spitting ordinance has been productive of results, although not to the extent that might have been hoped for. For the failure to obtain better results doubtless the form of the statute is in no small part to blame, inasmuch as a spitter cannot be arrested on the spot by the police officer who sees him commit the offense; but the name of the offender must then be procured by the officer, if possible, and a summons must be obtained and served, and later the officer must attend at the trial. There is little incentive to vigorous action on the part of a police officer in such a time-consuming process, nor can such a statute exert a maximum deterrent influence on the potential offender.

"The efforts of the Health Department to protect the community from the dangers of overcrowding on the cars of the Boston Elevated and on the surface lines have led many persons to walk to and from work, all or part of the way, to the undoubted advantage of most of them, not only with respect to the avoidance of influenza, but also with respect to the improvement of their general health.

"The closing of theatres, movies, schools and other places was very frankly an emergency measure. It may have to be resorted to again. But it is so radical and far-reaching in its effects that it cannot be lightly undertaken.

"There are, of course, many agencies in addition to the Health Department that have been and are in positions to help in the prevention of influenza. Of such agencies none ranks

higher in importance than the medical profession. A direct appeal has been made by letter to every member of the medical profession, asking their aid and pledging to them the assistance of the Department. It is, of course, with a view to assisting the physicians of the city in the treatment of their influenza patients that the department made its recent appeal for blood from recovered influenza-pneumonia patients, as the department has no patients under its own care. Similarly, with a view to helping the physician in preventing the spread of influenza in the families under his professional care, and at the same time thus procuring the aid of the physician in limiting the spread of the disease in the community, the department has spread broadcast instructions how to make and to use gauze masks, and has offered to furnish masks without cost, wherever necessary.

"A daily bulletin, an issue of about 500, showing the number of cases of influenza reported in each ward during the preceding 24 hours, is sent every morning to all schools, settlement houses, libraries, and hospitals in the city; and to the school committee there is sent each day a list, from 25 to 50 copies, containing the names and addresses of all children of school age reported during the same period as suffering from the disease.

"Cases reported as in need of medical attention, not infrequently during the height of the epidemic from the offices of physicians who themselves were unable to attend to the calls that had been left with them, have been and are being put into touch with the Health Department with appropriate medical relief. In cases of necessity medical inspectors in the service of the Health Department have had to look after such patients until some physician could be found who would assume, permanently, charge of the case.

"For the hospitals themselves, the Health Department acted as a clearing house during the height of the epidemic, and it is prepared and expected to do so again should need arise. It is at present in daily touch with the hospitals, with a view to having at all times an adequate supply of hospital beds."

New cases reported in Boston on December 31 include 624 of influenza and 10 of pneumonia, with 26 deaths from influenza and nine from pneumonia.

Reports received by the State Health Department on December 31 gave the total number of

new cases as 1,927 for the preceding 24 hours with 32 deaths. Officials said these reports indicate no change in the situation throughout the State. Natick reported two deaths, Springfield, four, and Deerfield and Northampton, one each.

New cases reported by the State Board were: Attleboro, 34; Fall River, 47; Falmouth, 21; Mattapoisett, 6; New Bedford, 36; Norton, 14; Plymouth, 47; Braintree, 44; Brockton, 26; Brookline, 36; Cambridge, 112; Hingham, 10; Norwood, 32; Rockland, 32; Danvers, 20; Gloucester, 34; Haverhill, 33; Lynn, 32; Malden, 44; Marblehead, 26; Melrose, 15; Swampscott, 15; Arlington, 37; Lowell, 38; Somerville, 42; Waltham, 110 (two days); Framingham, 14 (two days); Newton, 24; Wellesley, 14; Worcester, 76 (five days); Ayer, 5; Northampton, 32; Springfield, 36.

Other reports to the State Health Department, covering, for the most part, more than 24 hours, included 80 for Barnstable, 43 for Fall River, 35 for New Bedford, and two deaths; 29 from Provincetown, 21 from Swansea, 23 from Taunton, 53 from Braintree, in two days; 38 from Brockton, 30 from Brookline, 31 from Cambridge, 48 from Hingham, 31 from Quincy, 22 from Beverly, 32 from Danvers, 68 from Haverhill, 43 from Lynn, 24 from Merrimac, 15 from Salem, 15 from Stoneham, 50 from Lowell, 37 from Somerville, 20 from Waltham, 21 from Winchester, for two days; 31 from Woburn, for two days; 37 from Natick, and four deaths, for two days; 62 from Worcester, for two days; 56 from Fitchburg, 64 from Hudson, for three days; 47 from Lunenburg, for four days; 55 from Winchendon, for three days; 20 from Springfield, and two deaths, and 10 cases from Pittsfield.

Two deaths from pneumonia were reported from Quincy, where the recurrence of the epidemic is said to be causing considerable alarm. There are 40 new cases of influenza in this city.

Because of the large number of cases of influenza in Westboro, the public schools have been closed. In Beverly and Whitman, the schools have been reopened. The opening of Smith College was postponed until January 9, because of the prevalence of influenza.

Three Norwood physicians were arraigned recently in the Dedham court and were charged with violation of the health regulation requiring the reporting of all influenza cases. Severe action against all physicians who fail to report

eases of influenza to the Board of Health is threatened by those in charge of the State-wide campaign to stamp out the disease.

It is reported that State Health Commissioner Kelley has made a statement recently to the effect that there are being reported daily from one-fifth to one-fourth the number of cases that were appearing during the height of the epidemic, and less than one-tenth the number of deaths.

INFLUENZA CASES FOR DECEMBER.—The total number of cases of influenza and pneumonia reported in Boston from December 1 to December 30, inclusive, was 5,994, including 5,725 of influenza and 269 of lobar pneumonia. The total deaths from the epidemic during the same period were 588, including 379 from influenza and 209 from all forms of pneumonia. The total deaths in Boston from influenza in December, 1917, were 4; from broncho-pneumonia, 49, and from lobar pneumonia, 100, making a total of 153.

STATEMENT OF COMMISSIONER WOODWARD.—In a statement issued on December 31, Commissioner Woodward is reported to have made the following remarks:

"Unless the deaths show a decided increase the department will do nothing drastic. To give any great promise of success special municipal ordinances designed to check the spread of influenza must be so drastic as to interfere seriously with the essential as well as the non-essential activities of the community. The experience of cities where such radical means have been attempted show that fully as much could certainly be accomplished if for the next 10 days people, out of consideration for themselves and others, would voluntarily refrain from any unnecessary social intercourse or travel, keep away from crowds, walk at least a part of the distance to work, and if they feel symptoms of a cold remain at home and observe, for the protection of their families, the precautions which the health department has been constantly reiterating. Every person who is himself infected with influenza will probably infect somebody else before he is sick enough to stop traveling, and every susceptible individual who avoids infection by avoiding crowds protects his family and the public, and helps break the chain that is keeping up the present sickness and deaths from the disease."

On January 2, 509 new cases of influenza and nine of pneumonia were reported to the Health Department for a period of 24 hours, with 28 deaths. These figures show a decrease over the number of cases, 672, reported for the preceding day. Reports for January 2 show even fewer cases, 479 new cases of influenza and 10 of pneumonia being the number reported, with 18 deaths; this is the lowest figure for the week.

Dr. Woodward believes that there are still many cases which are not being reported, because many persons having the disease have neither physician nor nurse in attendance. He thinks that the number given daily represents only about one-third of the actual cases. Dr. Woodward constantly reiterates his warning against sneezing, coughing and spitting. The emergency committee has also made plans for emphasizing the force of its anti-influenza appeals. It plans to impress its rules for preventing the spread of the disease through paid advertisements, if this proposal meets the approval of Mayor Peters. It has been found that moving pictures are willing to cooperate by showing warnings on their screens.

Dr. John J. Hurley has suggested the use of cotton pledgets in the nostrils as a preventive measure against infection. This has been recommended by the Health Department. Dr. Hurley has advised the use of bichloride absorbent cotton because of the germicidal properties of the bichloride incorporated in it, but any ordinary cotton of the same grade would be equally effective in arresting droplets of mucus that otherwise might be inhaled and find their way to the delicate mucous membrane lining the nose, there to set up a general influenza infection. Pledgets would not afford protection against infection through the mouth, but as most people breathe through the nose and not through the mouth, the value of pledgets as a preventive measure must be admitted.

In the opinion of four Boston physicians recently interviewed, influenza will probably remain until March or April. It was suggested as a remedy that the conditions prevailing in the streets and homes in the slums be improved, that returning soldiers should be quarantined, that the crowding on street cars be prevented, and that a contagious hospital be built in Boston.

Boston schools were reopened on January 2, and all precautions are being taken to prevent the spread of influenza among the children. Under the direction of Dr. Devine, 44 experienced school physicians and 40 nurses inspect the school children every morning and send home any who show symptoms of disease.

On January 3, 561 new cases of influenza with 30 deaths, and 24 new cases of lobar pneumonia with four deaths, were reported. This increase in the total number of cases is attributed by Health Commissioner Woodward to increased vigilance on the part of physicians in reporting.

Reports to the State Department of Health for the 24-hour period show 3,390 new cases of influenza and 52 deaths. In some places as many as five days are covered by the reports and a material proportion of the total includes more than one day.

Most important of the reports are the following: Attleboro, 52 cases (two days); Fall River, 46; New Bedford, 50 cases and five deaths; Plymouth, 11 (two days); Braintree, 33 cases (two days); Brockton, 281; Brookline, 53; Cambridge, 86; North Attleboro, 24 (two days); Norwood, 21 (two days); Walpole 36 (two days); Beverly, 97 (four days); Everett, 116 (four days); Haverhill, 77; Malden, 82; Manchester, 57 (two days); Melrose 46; Salem, 41; Arlington, 54 (two days); Belmont, 13; Lawrence 47; Lowell, 35; Somerville, 128; Waltham, 26; Watertown, 22; Winchester, 30 (two days); Woburn, 28; Douglas, 34 (three days); Grafton, 38; Natick, 62 (two days); Newton, 37; Worcester, 145 (several days); Clinton, 25; Northampton, 23 cases and one death; Springfield, 22 cases and five deaths; Wilbraham, 21 cases (five days); Greenfield, 15.

The health officials of this State say that every known means of battling influenza has been tried but that until the organism of the disease and the method of infection are known, not much can be expected in conquering it.

Health officials state that the number of cases being reported falls far below the number reported in the epidemic of the summer and fall. They believe that many cases are being reported as influenza which are nothing more serious than colds.

On January 3 there were 17 new cases of influenza reported in Attleboro.

On January 4, 449 new cases of influenza and

10 of pneumonia were reported in Boston; deaths from influenza numbered 23 and from pneumonia, 7.

Only 232 cases of influenza and 23 deaths, and 13 cases of pneumonia with seven deaths were reported in Boston on January 5.

On January 6, 164 cases and 25 deaths were reported, with two new lobar pneumonia cases and four deaths. Further proof of improvement in the situation generally is furnished by the fact that applications for transfer of patients to hospitals and for nurses have become less numerous in the past two days. The Health Department's returns on January 6 show that there are 72 vacant beds available in Boston for the reception of influenza patients.

The State Department of Health announced on January 6 that reports of influenza cases were made by 78 cities and towns, and while 2,251 cases were reported, 533 of these came from communities which sent in reports covering from two days to one month. Health authorities are gratified at the small number of deaths reported outside Boston.

Deaths reported were: Springfield, one; Northampton, one; and Dennis, one.

New cases reported were: from Fall River, 49; Boston, 449; Haverhill, 70; Lynn, 44; Malden, 65; Saugus, 135; Lowell, 63; Medford, 53; Somerville, 94; Waltham, 55; Watertown, 34; Newton, 103; Worcester, 60; Fitchburg, 71; Leominster, 51; Springfield, 15.

Schools have been reopened in Brookline. Doctors and nurses examine the children regularly and send home all those who show the slightest indications of influenza or who have illness in the families at home.

On January 7, there were reported in Boston 213 new cases of influenza and 31 deaths, with 10 new lobar pneumonia cases and 11 deaths of this disease. Influenza deaths for the past four days have been, respectively, 33, 23, 25, 31, and for lobar pneumonia, 15, 7, 4, and 11.

Although 2,251 new cases of influenza were reported to the State Department of Health on January 7, only three deaths were recorded in the entire Commonwealth, with the exception of Boston.

Deaths reported were: from Boston, 33; Springfield, one; Northampton, one; Dennis one.

New cases reported were: Fall River, 49; Boston, 449; Haverhill, 70; Lynn, 44; Malden, 65; Saugus, 135; Lowell, 63; Medford,

53; Somerville, 94; Waltham, 55; Watertown, 34; Newton, 103; Worcester, 60; Fitchburg, 71; Leominster, 51; Springfield, 15.

These reports indicate that the recurrence of the influenza outbreak is now on the wane, and the situation throughout Massachusetts is more encouraging than at any time since December.

The report for the week ending January 4 includes 3,558 cases of influenza in Boston and vicinity; but there were only 191 deaths, of which 35 were non-residents. There were 83 cases of lobar pneumonia and 53 deaths from pneumonia, both bronchial and pneumonia.

STATE-WIDE TEST OF SERUM.—State Health Commissioner Eugene R. Kelley has announced the appointment of a committee of physicians to make arrangements for the use of a blood serum for treating influenza-pneumonia cases throughout the State. In discussing the present situation, he is reported to have made the following remarks:

"In my opinion the influenza situation in the State is as follows: We are having reported daily from one-fifth to one-quarter the number of cases that were appearing during the height of the epidemic. We are having less than one-tenth the number of deaths reported daily, as compared with the same period. As nearly as we can estimate we are having two to three times the number of cases reported that we have been having each winter since the 1888-9 epidemic. These statistics show on their face one of two things, either that the serious cases are much fewer in number, or that many very mild or doubtful cases are being reported by physicians. As a matter of fact, we believe both are true, basing our opinions on reports from boards of health and from individual physicians who are unanimous in the statement that the general run of cases at present is very mild and brief.

"During the epidemic, a method of treating the influenza-pneumonia cases with blood serum taken from a convalescent influenza-pneumonia case seems to have proved its value. Plans are nearly perfected for the preparation and use of this serum in hospitals distributed throughout the State. The process of preparation is delicate and obtaining the serum depends on the coöperation of recently convalescent cases of influenza-pneumonia. Details will be made public at the earliest possible moment.

"The influenza is still with us in more than

its normal amount, but fortunately in a comparatively mild form. We must expect many cases and some deaths from the disease this winter. The exercise of ordinary common sense by each individual is our real personal protection."

On January 2, Commissioner Kelley of the State Health Board requested the Homeopathic Hospital to furnish him with a number of bacteriologists for tests and to make serum.

SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY.—There will be a meeting of the New England Pediatric Society on Friday, Jan. 24, 1919, in the Amphitheatre of the Children's Hospital, Longwood Avenue, at 4.30 P.M.

Clinical cases will be presented by John Lovett Morse, M.D., Boston; William E. Ladd, M.D., Boston; and Robert W. Lovett, M.D., Boston.

WILLIAM E. LADD, M.D., *President*,
RICHARD M. SMITH, M.D., *Secretary*.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at the Roxbury Masonic Temple, 171 Warren Street, January 28, at 8.00 P.M.

COMMUNICATIONS.

Repeated Caesarean Sections, Frederick L. Good, M.D.

A Few Thoughts on Caesarean Section.

Thomas F. Greene, M.D.

Preparation and After-Care of the Patient.

Anna Conlogue, R.N.

Discussion.

Frank W. Sleeper, M.D.

BRADFORD KENT, M.D., *Secretary*.

RECENT DEATHS.

DR. WILLIAM G. ADAMS died recently at his home in Boston. He was born in Boston in 1873. He was graduated from Harvard Medical School with the class of 1897. During the years 1895 and 1899, Dr. Adams was house surgeon at the Boston City Hospital, and later was instructor at Tufts Medical School for eight years. His subsequent practice was confined to surgery, but because of failing health, he had not been active in his profession recently.

DR. H. L. DEARING died, after a short illness due to influenza, at his home in Braintree on December 30. Dr. Dearing was 56 years old. He began his study under the direction of his father, completed his medical education in New York at the Bellevue Hospital Medical College, from which he was graduated in 1890, and later went to Europe and studied in hospitals there. He began to practise in Braintree in 1891. At one time Dr. Dearing was surgeon of the 5th Massachusetts Infantry. He was a member of the American and Massachusetts Medical Societies.

DR. WILLIAM G. CURTIS died at his home in Everett on January 1, at the age of 27 years. He was graduated from Tufts Dental School in 1914, and had since been practising in Everett.

DR. O. A. EVERETT died recently at his home in Bolton. He was the only physician in the town, and after devoting his entire energy for weeks in the care of cases of influenza, finally became ill with the disease. He was fifty-eight years old and a graduate of Dartmouth College and Harvard Medical School.

DR. WALTER D. WILLIAMSON, major surgeon at the Maine General Hospital, died at his home in Portland, Me., on June 2. He was born in Milan, N. H., and was graduated from the University of Vermont Medical School. He practised in Milan, Gorham and Berlin, N. H. He was a member of the Maine Medical Society.

The Boston Medical and Surgical Journal

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Original Articles.

INDUSTRY AND MEDICINE.

By S. DANA HUBBARD, M.D., NEW YORK CITY.

THE present war has brought home to nations, as never before, their dependence upon industry to supply material for offense and defense, and in the field of preventive medicine, when every possible effort is being expended to prevent and control the spreading of disease, it is, indeed, well to consider the effects of industrial occupation upon health and the production of disease. Further, with the entrance of the woman into industry, especially in branches never before attempted by this sex, there is all the more reason for carefully considering this matter.

It may be said that a new branch of preventive medicine is rapidly opening into being. A branch concerned with the environment of both the home and the shop, in contrast, most striking, to the public health of the past, which concerned itself mostly with the environment of the home.

Development on these lines is needed to meet the altered conditions of the working classes, both males and females. In fact, such may be safely said to be overdue, for industrial medi-

cine, unfortunately, has not kept pace with the advances made in industry which have taken place in the last century.

Those who appreciate and recognize this need are looking for information, and there is no more reliable source than the members of the medical profession, especially those specially trained in hygiene and sanitation.

There will be few, indeed, who will not be astonished by the need that this new field of medical science covers. Industrial medicine has made some wonderful and far-reaching advances, but these are only a beginning. It must be appreciated fully that output and production primarily depend for efficiency on health and that the health of the worker, male or female, young or old, depends practically at all times on personal hygiene and effective sanitary control.

The day is past when the family doctor can be content to treat his patients, the majority of whom are industrially employed, with no knowledge of how they spend their lives or of the influences injurious to their health, and under which they are daily exposed.

Industry and industrial processes are ever altering and expanding, without consideration for the health of the workers. The human body reacts to these influences in new and unexpected ways. Many such reactions may be associated

with injury both to life and limb, and the dangers incidental thereto many times directly affect control or hamper output.

The family physician of the future must acquaint himself with what goes on in the shops and factories as well as in the homes of the workers; so, also, must the employer of labor or the manufacturer concern himself with the health of his employees and conditions which affect such. Light, fresh air and cleanliness to the individual may be classed with lubrication to the machine, sufficient and readily accessible stock of raw material, and order in storing and shipping, as such affect production and manufacture. Proper lighting is necessary to health and it is necessary to production, for without adequate and proper light none can work at the highest capacity. Fresh air in proper amount and given so as not to affect the worker by chilling or exposing also aids in preventing fatigue. Cleanliness is health's hand-maiden and without which no shop or factory can expect but a low degree of efficiency.

Cleanliness, however, here means application of the rules of personal hygiene and general sanitation to both worker and shop.

Employers today, more than ever before, are appreciating that a healthy employee, like a satisfied employee, is an asset, and nothing improves morale as well as working under conditions that are pleasing and healthful.

It is felt, however, that medical colleges today are not alive to the demands of the hour in this respect, and that more attention must be given to the teaching of industrial hygiene in order for the doctor of the future to know the effects of industry upon health and production. If there is blindness in this respect it must be given attention. Some institutions are alive to this and are giving careful consideration to it.

The practitioner of former days no doubt practised upon a clientele busied with agriculture or home industry, and by reason of intimate neighborly relations, the family physician was more or less closely acquainted with the daily life of his patients. On this account he was able to dispense advice and medicine in keeping with such conditions. Modern life has, however, changed these social relations, and today, especially in our large industrial centers, the industrial, and even the home life of the worker, is, in numerous instances, a mystery to the family medical attendant.

Public health authorities, however, have been

alert to the changing relations and have, as early as the period fixing a limit to age in juvenile employment, taken advantage of both personal and sanitary conditions, as well as form of employment, and there has been required by law, supervision of such employment by these authorities. No one has ever questioned the usefulness or propriety of this form of legislation.

A step far in advance was next made when, through endeavoring to prevent the spreading of infection, certificates of health were required of individuals performing certain classes of work—baking, cooking, serving food and beverages, etc.,—these certificates of physical fitness or, in other words, condition of health and freedom from communicable disease, assured the public and the employer of the condition of the worker, but such physical examination was a real aid to the worker as, in many instances, defects or diseases were located of which the individual was unaware and which, being determined, made it possible to add to the comfort of the worker as well as protect the public. This public health work was a great help in the control of such diseases as consumption, syphilis, gonorrhea, skin affections, parasitic infestation, etc., and being repeated at stated intervals was helpful to the individual.

The members of the medical profession have been rather slow to appreciate this work and comparatively few have interested themselves so that most of this work has been performed by public and coöperative clinics. This, economically considered, is a disadvantage to the medical profession.

Another progressive step was made when public departments required a physical examination of its workers—at first a prerequisite to entrance to a civil service test, for certain forms of civic employment—police, fire, etc.,—later it was extended throughout some of the departments, to be repeated annually. This very materially aided in reducing absentees and loss of time of employees. This physical examination was helpful to the individual and also protected the community against employing persons likely to become impedimenta and unable to give a full day's work for a day's pay. These physical examinations also enabled the physically unfit already in the service to be re-assigned to tasks more in keeping with the physique of the employee. Employees who had latent and, in many instances, unrecognized disease which

might menace other employees, were discovered and placed in sanatoria or suitable hospitals before they had a chance to spread infection and interfere with the work of their associates.

The "loss of time" proposition was then considered and again the worker was benefited. A sick person has a place and that place usually is home and under proper medical and nursing care. Employees, absent from work, were required to have some one telephone such absence, and in instances of absences unexplained or unsatisfactorily explained, investigation by a district physician was made forthwith. This enabled the employee to get proper medical service and was of great assistance in reducing loss of time. Absentees incident to viciousness or bad habits—alcoholism, etc.,—are detected and weeded out, the service itself being materially aided by this process.

Perhaps, in truth, it might be stated that the physician has not seized the opportunities which industry was offering, and such not being brought to the attention of the medical profession, rather golden opportunities have been permitted to pass unnoticed.

When a physician visits a patient and that patient is a worker, the question may be asked: Does the doctor always consider the relationship of the illness of the patient and the employment? It is thought not. The gap between the doctor and the employer and the patient is too wide and the relationship too formal. The doctor has heretofore contented himself with his medical knowledge and has not interested himself in industrial processes which, no doubt, in numerous instances naturally adversely affect the health of the patient, and without knowledge of or remedying these conditions treatment cannot be as effective as with such.

Public health departments have concerned themselves already too long with personal hygiene and sanitation as such was affected by unclean toilets, spittoons, spitting upon floors, smoking chimneys, and the like, and have not concerned themselves regarding processes inimicable to the health of the worker as well as the method and place of application of such work. Exceptions there may have been to this statement, but such has not been general practice with our public departments.

Factory managers are today, more than ever, appreciating that the personal hygiene of the worker is as essential to efficient production as good wages and high morale. The value of an industrial physician and his connection with the

manufacturing plant has been established in the production of munitions, and when the war is over this practice will be continued by many.

Some years ago, when unions were young, these mutual associations for purposes of attracting members had benefit connections which employed doctors for sick members and their families. This was not generally satisfactory and this "contract" work soon grew into disfavor. These physicians also, owing to small pay, did not appreciate their opportunities, and so medical connection with labor was not altogether satisfactory. These relations were, no doubt, the beginning of industrial medicine, but the effect of such was not considerable.

Today, nearly all large industrial plants have their first-aid rooms, rest rooms, recreation periods, vacation establishments, hospitals and sanatoria for their employees, and, in many instances, maintain as well private staffs of physicians and nurses and home welfare visitors.

Some establishments abroad—munition plants—have gone so far as to have rest periods, tea being served to employees at certain times of day, entertainments in special halls and suitable talent provided for these occasions. Others have started schools for the instruction of their workers. The Joint Board of Sanitary Control of the Ladies' Garment Workers has a medical director and staff, and operates clinics for medicine and dentistry, as well as night schools for their members. This establishment is doing splendid work and is well organized, and appears fully to appreciate the opportunities which lie in such an organization.

The war has, therefore, done some good. It has brought to attention the utter dependence of industry on labor and the efficiency of output on health.

This wonderful country, the mother of invention and modern trade, is grasping this situation and, no doubt, will apply this knowledge with alacrity. It is therefore necessary that the medical profession be prepared to meet this emergency. The more the general health of the worker is supervised, the greater will be the results both to the worker and to industry. Plans to accomplish this purpose must, however, be organized and systematized. Poor and inadequate lighting, poor or defective ventilation, elements of hazard (mechanical or physical), together with stresses and all correlated conditions detracting from first-class results, must be studied, classified, and, when detected, so recorded and

published as to produce suggestions which will either ameliorate or rectify.

Systematic and repeated physical examinations, surveys of groups of workers, investigation of processes and places where such are operated, with a careful study of personal hygiene and sanitary science will correct improper and unhealthful conditions.

Overwork, excessive weight lifting, long hours of labor, monotony, meals, recesses, must be studied individually and regulations devised along scientific and practical lines.

Clothing, cooking and home environments must be considered as well as personal habits, and when every point of relationship of the worker with the community is considered, efficiency will be the return, and with efficiency, general reduction in cost of production will inevitably result, which is beneficial not only to the poorly paid but to all.

Good work never exists long without recognition, and we hope that the work required to be done in this particular, now that it is under way, will gain momentum and earn for itself a place in general sanitation that will be properly recognized by the medical profession as a whole. Medicine and industry must be brought closer together and each factory will in time have its own medical adviser who will be trained to fill the position required of such an official.

This, no doubt, is a new field of medical activity, the importance of which has been severely tested and proved by the war; and whole time medical service in certain large factories and establishments is a necessity. This field must be carefully cultivated and the health of the worker conserved. Labor turn-over must be reduced, general morale improved and output increased; but, highest and most necessary, the public health must be improved.

The influence appears to be a direct one, where the wealth of the nation is concerned and where industrial efficiency will be given its best opportunities.

CONVALESCENT SERUM.—Dr. John S. Hitchcock, director of the State Bureau of Communicable Diseases, is selecting a corps of physicians who will be trained at the Chelsea Naval Hospital in administering a convalescent serum which has been used there successfully by Dr. Redden and Dr. Maguire of the United States Army. The State granted recently an appropriation of \$5,000 for this work.

THE INCIDENCE OF VENEREAL DISEASES AMONG 6,086 MEN DRAFTED INTO THE SERVICE WHO REPORTED AT CAMP A. A. HUMPHREYS, VA., BETWEEN SEPTEMBER 4 AND SEPTEMBER 18, 1918.*

BY LIEUTENANT-COLONEL ISAAC W. BREWER, M.C.,
CAMP HUMPHREYS, VIRGINIA.

OF the major public health problems in the United States, venereal diseases are of the greatest importance. Until very recently the public health authorities almost neglected this question, and at the present time, aside from some general measures undertaken by the larger health organizations in the United States, very little is being done to prevent these diseases. It is difficult to determine the exact importance of this class of infection. The results are often remote and not easily traced. However, we know that venereal diseases cause not less than 20% of the insane; that a large per cent. of the abdominal operations performed upon women are the result of venereal infection; that probably 19.5% of the blind children of the United States are so because one parent or the other was suffering from gonorrhea; that a considerable number of cases of heart disease are the direct result of syphilis. These statistics, imperfect as they are, should at once focus attention upon the prevention of these diseases.

Until the selective draft law went into operation we had practically no statistics regarding the prevalence of venereal diseases in civil life. We had known for a long time that these diseases prevailed extensively among men of the United States Army. Vedder, in a study of syphilis among applicants for enlistment in the Army, prior to the war, came to the conclusion that 20% of the males of military age were infected with syphilis before entering the service. When the draft law became operative we at once made a cross-section of the physical condition of the male population of the United States between the ages of 21 and 31. Unfortunately, these statistics have not been published. From this cross-section we learn that venereal diseases, especially gonorrhea, is extremely prevalent among the men who were called for military duty. In order to determine the incidence of venereal disease among men sent to mobilization camps by the draft boards, special attention was paid to this subject during the examination of

* Published by authority of the Surgeon-General, U. S. A.

the September draft, which arrived at Camp A. A. Humphreys between September 4 and 18. In all 6,086 men were examined; of these 5,856 were white and 230 were colored. Most of the men came from New Jersey, Virginia, Maryland, North Carolina and West Virginia; a few were residents of the District of Columbia and New York, and an occasional one came from sixteen other states.

There were 158 cases of venereal disease among the white men, a percentage of 2.7. Among the colored there were 56 cases, a percentage of 24.3, all but two of the colored men coming from the State of Virginia. Although it is not fair to draw conclusions from groups so widely separated as to numbers, yet it seems that the colored men suffered far more from venereal diseases than did the whites. Table No. I shows the incidence of venereal disease among the white men who were examined in the September draft. Maryland had the lowest percentage—1.5, while North Carolina had the highest percentage—3.6. Assuming the State of Maryland to be 100%, the rate in North Carolina would be 240%. Comparing the white and colored men received from the State of Virginia, we find that the rate of venereal disease among the colored men is nearly ten times as great as among the whites.

The following table shows the percentage incidence of venereal disease, distributed by states (white men only):

TABLE I.

(States sending over 300 men.)

STATE	NUMBER OF MEN EXAMINED	NUMBER OF CASES OF VENEREAL DISEASE	PER CENT. INFECTED.	PER CENT. ON BASIS OF MARYLAND AS 100%
Virginia	533	14	2.6%	173%
New Jersey . .	3951	107	2.7%	180%
North Carolina	386	14	3.6%	240%
Maryland	473	7	1.5%	100%
West Virginia	362	8	2.2%	147%

(States sending less than 100 men.)

Dist. Columbia	86	3	0.4%
New York . .	30	1	0.3%
Other States .	35	4	1.2%

Table No. II. shows the distribution of cases according to the different venereal diseases. Gonorrhea accounted for 89.7%; syphilis, 8%; chaneroid, 2.3%. More than half the cases of gonorrhea were chronic.

TABLE II.

DISEASE	NO. OF CASES	PER CENT.
Acute gonorrhea	87	40.6%
Chronic gonorrhea	105	49.1%
Syphilis, primary stage . .	12	
" secondary stage . .	4	8.0%
" tertiary stage . .	1	
Chaneroid	5	2.3%
TOTAL	214	100.0%

TABLE III.

GONORRHEA CASES

YEARS												
20	21	22	23	24	25	26	27	28	29	30	31	32
1	80	56	7	10	5	7	5	12	2	4	2	3

SYPHILIS AND CHANCEROID CASES

11	2	1	3	1			1			1		
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This table shows the distribution of cases according to age. It is incomplete, as data showing the ages of the men drafted are not available. However, it shows that 80 of the cases of gonorrhea and 11 of the cases of syphilis were 21 years of age. One hundred and thirteen cases of gonorrhea were over 21 years of age.

Of 192 cases of gonorrhea, 130, or 68%, had not been previously infected. Of 42 cases, 22 were reported as having had gonorrhea prior to the present infection. Fifteen cases of gonorrhea had previous history of syphilis, while two other cases had a history of chaneroid. One other case had gonorrhea, chaneroid and syphilis. Of the 17 cases of syphilis, 11 had no previous infection. One man with a chanere reported that he had previously suffered from syphilis (diagnosis of chanere in this case was not made by the laboratory). Of the 214 cases of venereal disease, 153, or 72%, said their present infection was their first.

What is the relation of venereal disease to the Army? The experience of this camp, which agrees with the experience at other camps, indicates that 84% of the cases of venereal disease were contracted prior to their entry into the military service. A man is safer in the Army than in civil life.

Table No. IV. was prepared with the intent of showing approximately the time of infection. From this table we see that 30% of the men had infections six months or more old; some of them had been infected four or five years. About 25% were infected from one to six months prior to receiving the draft call. Another 25% of the men were infected during the month preceding the draft call. Fourteen per cent. of the men

did not know they had any infection at the time of examination, or first became aware of the infection after reaching camp. There were 31 cases of such infection. About 9% of the men were infected between the time of receiving the draft notification and arrival at camp. In other words, they were infected during the farewell parties.

TABLE IV.

RELATION OF DATE THE INFECTION WAS DISCOVERED TO DATE OF NOTIFICATION TO GO TO CAMP AND DATE OF ARRIVAL IN CAMP.

NOTICE OF INFECTION	NO. OF MEN	PER CENT. OF TOTAL
1. Six months to a year or more before draft notification	60	28.0%
2. One to six months before date of notification	52	24.3%
3. Less than a month before date of draft notification	52	24.3%
4. Between date of draft notification and arrival at camp	19	8.9%
5. On or after arrival in camp ..	30	14.0%
6. Unknown	1	.5%
	214	100.0%

Source of Infection. One hundred men, or about 48%, received infection from regular prostitutes, to whom they paid a fee; 109 cases, or about 51%, were infected by chance acquaintances or "pick ups." These latter, however, state they did not pay any money. The remainder of the men did not know the source. One man claimed he was infected by his wife, who practised adultery. Sixty-two per cent. of the men claimed to be infected in cities or towns other than that from which they came. Others were infected by women in their own towns or by women passing through their towns.

The experience of this war has shown that there is a grave venereal problem in the United States. A problem that challenges the best thought of the country, and must be met squarely without false modesty. If this great cause of sickness, misery and inefficiency is to be eliminated there must be an active campaign which will include not only the health authorities and the social agencies of the country, but which will extend into the homes of all the people until our children are so properly instructed in sex hygiene and have the knowledge and self-control that make it possible for them to control their passions.

THE CLINICAL ASPECTS OF THE RECENT INFLUENZA EPIDEMIC.*

BY EDWIN A. LOCKE, M.D., BOSTON; GEORGE E. RÖNNE, M.D., BOSTON; AND HERMAN LANDE, M.D., BOSTON.

[From the 4th Medical Service, Boston City Hospital.]

THE recent severe epidemic of influenza and pneumonia in Boston, the first since 1889 to 1891, has presented many features of extraordinary interest. Early in the course of the epidemic all the local hospitals were taxed to their utmost capacity and the segregation of large numbers of cases in the wards has afforded an unusual opportunity for careful clinical study of the disease.

Chart I shows the daily number of cases admitted and also the total number of deaths from this disease at the Boston City Hospital from September 3 to November 30. It will be noted that the number of admissions during the early days of September rapidly increased but with wide variations and finally reached its maximum on the thirtieth. After September thirtieth the number of daily admissions diminished, at first abruptly and then more gradually, until by the first of November there were but three. On November fourteenth the curve shows a secondary rise of significant nature which corresponds to a general increase in the number of cases reported from the community at large. The whole curve, probably, represents with considerable accuracy the incidence of the disease in Boston during the prevailing epidemic. A total of 1550 cases of influenza were treated in the hospital during the period, September third to November thirtieth. This chart also gives an excellent idea of the high mortality of the disease although the death rate among the hospital cases, by reason of their severe type, must be accepted as greatly in excess of the general mortality.

Evidence of the extreme contagiousness of the disease and the dangers of close contact with afflicted individuals is afforded by the relatively large number of the hospital nurses and resident physicians who contracted the disease. In spite of the usual precautions of masks, gowns, etc., 74 nurses and 13 residents at the City Hospital developed influenza. Nine of the former and two of the latter died. Among a total of fourteen physicians at the South Department of the City Hospital, nine were afflicted.

* Read at the meeting of the Boston Medical Library in conjunction with the Suffolk District Medical Society, Dec. 4, 1918.

The discussion to follow is based on an intensive study of the cases admitted to the Fourth Medical Service (Harvard Teaching Service) and a few seen by one of us in private practice, in all numbering 350 cases. By reason of the emergency attending the epidemic at its maximum, pressure for beds in the hospitals was so acute that only the most urgently sick cases could be admitted. Consequently, in general the cases receiving hospital treatment were not representative of the disease as seen generally, but rather of the most severe types.

TYPES OF INFLUENZA.

Although the course and clinical picture have been somewhat varied we are unable to divide our cases into any definite groups which shall conform to the generally accepted classification of "nervous," "respiratory" and "gastro-intestinal" types. Occasionally, to be sure, cases have presented very pronounced nervous or gastro-intestinal symptoms but never in our experience sufficiently characteristic to differentiate them sharply from the usual case where the clinical picture is of an acute catarrhal infection of the respiratory tract. Judging from the published reports of outbreaks of the disease in other localities the predominance of gastro-intestinal, nervous or respiratory symptoms is a matter of marked variation. When gastro-intestinal or severe nervous symptoms have been present it has usually been in very severe cases when they did not replace catarrhal symptoms but were simply added to them.

The clinical picture in our cases has been singularly uniform and if any division is to be made, the most reasonable would seem to us: (1) simple influenza, and (2) influenza with complicating pneumonia. Such a grouping is not free from the objection that it seems probable from all the evidence at hand that in cases of even moderate severity but with temperature for more than two or three days there is invariably a bronchopneumonia present. From this point of view the distinction between those which show pneumonia and those which do not is simply a matter of the extent and severity of the bronchopneumonic process, in other words largely a matter of the severity of the disease. In our experience, with two possible exceptions, the critically ill and subsequently fatal cases have all shown unmistakable evidence of pneumonia. One of these was a man of 71

who was brought to the hospital in a moribund condition and it was impossible to make a satisfactory examination of the chest. The second was a boy of 16 who was first seen a few hours before death and a satisfactory examination of the chest was likewise impossible.

Of the total 350 cases, 26 per cent. were of the type of uncomplicated influenza and 74 per cent. influenza with pneumonia. Similar figures for the population at large are not yet available and can never be accurately compiled. It is obvious, however, that the above ratio of the simple to the pneumonia type must be greatly increased when all cases are considered. The various cantonnments throughout the country furnish relatively precise figures on this point as in these communities all cases are under observation and carefully recorded. The statistics thus far published from these sources indicate that, as a conservative estimate, slightly under 20 per cent. of all cases developed a secondary pneumonia.

INFLUENZA AND AGE PERIODS.

In accordance with the general experience in previous pandemics of influenza the greatest incidence in our cases was during early adult life, as is strikingly shown in Chart II. It will be noted that relatively few cases were seen before fifteen or after fifty. The rise starts abruptly in the semi-decade 15-19, the increase continuing until the age period 25-29, when it reaches its maximum. Sixty-eight per cent. of the cases occurred in individuals between the ages twenty and forty.

Sex seems to play no important part. In the above group the number of females slightly exceeded the males.

DEATH RATE.

For the uncomplicated influenza the death rate was approximately 2 per cent., while in the group of influenza complicated by pneumonia 51.9 per cent died. As stated above, the two fatal cases in the first group were first seen just before death and in all probability had pneumonia. A mortality of 51.9 per cent. for the influenza pneumonias is roughly twice the mortality rate in the case of lobar pneumonia as seen in hospital practice. The general death rate for all influenza cases treated in the hospital to November thirtieth, or a total of 1550, was 31.8 per cent.

An interesting and significant difference is shown between the death rate among the pneumonia cases of the six weeks during the epidemic and the cases studied during the subsequent six weeks. In the first the death rate was 63.4 per cent., and in the latter, 39.4 per cent. This wide difference may to some extent be explained by the fact that since the active epidemic there has been a sufficient number of beds to accommodate all who applied for admission, to the hospital and consequently a milder type of case may have entered. On the other hand, 67 per cent. of all influenza cases treated during the epidemic had well defined pneumonia, while for those admitted to the wards from October fifteenth to November thirtieth the pneumonias comprised 83 per cent. Our impression is very definitely that the cases seen within the past few weeks have been much milder than those seen during September and early October. Many observations made during previous pandemics appear to confirm this impression, namely, that the mortality is considerably greater during the height of the epidemic than among the individuals infected later.

In so small a series of cases the figures for the mortality rate in the various age periods are of little value since in some instances the number of cases is so small that the calculated percentage of deaths must be grossly inaccurate. It is reasonable to speak only of general impressions. The death rate appears to be high for those under five years, to decrease sharply until the age period 15 to 19, when it increases rapidly to a maximum in the period 30 to 34. This level is maintained fairly constantly until the age 50 to 54, when it again falls abruptly to rise again after 65. The few patients over 65 years who have been in the wards have nearly all succumbed to the disease.

CLINICAL MANIFESTATIONS.

The cases seen by us presented a very striking uniformity in type and a clinical picture of unusual definiteness. Judging from recent published reports of groups of cases in other communities there are indications that in certain respects, namely, as regards the frequency and intensity of individual symptoms and the severity of the disease, there may be quite surprising variations in different epidemic centers.

As a rule, in our cases, the clinical features conformed to the general text-book type. The

onset was sudden in 84 per cent. In a few instances the story given was that the patient dropped on the street or collapsed while at work, but careful inquiry in every instance revealed the fact that the individual had kept about in spite of his symptoms until overcome. In other words, the collapse was never an initial symptom. In the remaining 16 per cent. the beginning of the disease was gradual, the patient feeling mean and with the general symptoms of an ordinary cold for a few days before the symptoms became acute. Many of these cases, however, at the end of this stage, were suddenly seized with a chill which frequently proved to be the beginning of a pneumonia.

In 60 per cent. of all cases the first symptom was an actual chill. Many others had chilly sensations but without real rigor. Varying degrees of malaise and prostration, usually very marked, were among the most common symptoms at onset. Perhaps the most distressing complaint has been the constant agonizing pains in the back, legs and frequently in the joints, coming on within a few hours after the rigor and lasting with diminishing severity for one to several days. Accompanying the pain we have frequently noted a very acute hyperalgesia of the skin either confined to the lower region of the thorax posteriorly or more general and corresponding to the areas where the pain was felt. So constant has been this combination of sudden onset with prostration and pronounced pain that in its absence we have awaited further developments before making a diagnosis of influenza.

Headache was a prominent early symptom in 185, or more than one-half the cases. It was often general or occipital but more frequently frontal. We have seen a few of hemicranial distribution. In the majority of cases it has disappeared gradually after a few days, but rarely has persisted and with unusual violence for from one to two weeks. In all such cases the pain is probably a symptom of frontal sinusitis. Epistaxis occurred very commonly both as an initial or early symptom (36 cases) and also later in the disease, especially in those with complicating pneumonia.

A moderate burning sensation in the eyes and slight photophobia were not uncommon. The conjunctivae in such cases were more or less injected. A majority felt a rawness or slight soreness in the throat and were noted to be hoarse. Several had actual aphonia. Coryza was much less common and seldom severe. A dry and of-

ten extremely harassing cough developed by the second or third day, sometimes even as an initial symptom. Fairly often it assumed a characteristic paroxysmal type and after the disease was well established was sometimes so violent as to lead to vomiting. One of the most pronounced symptoms was the burning pain under the sternum which might be felt from the larynx to the lower limits of the thorax. The pain was constant but greatly aggravated by cough. It often persisted for as long as a week or ten days. Fever was one of the earliest and most characteristic of the symptoms. It rises abruptly and reaches its maximum in the first 24 to 48 hours in the uncomplicated cases and declines gradually during the subsequent few days to normal, the whole course of pyrexia in the simple influenzas seldom lasting more than from four to six days. The pulse and respiration in this type are noteworthy only because of the slight departure from the normal. Many showed no increase whatsoever and a pulse rate above 100 or respiration above 25 were the exception.

Profuse sweats, either early in the course of the disease or later with complications, were by no means rare.

Some, at entrance to the hospital, seemed surprisingly comfortable although profoundly prostrated, while others suffering from the pains and headache presented a picture of great agony. A few were delirious but much more often the patient would lie in a sort of stupor as though completely overwhelmed by the toxemia.

Of the skin lesions an intense erythema of the face or the chest and back was the most common and in occasional cases might well have been confused with the rash of scarlet fever. On a very few occasions we saw an indefinite macular rash somewhat resembling that of measles. During the early weeks of the epidemic we observed a few cases with small papular lesions scattered over the abdomen and lower chest which exactly simulated rose spots. Herpetetic lesions on the lips were the exception and never extensive.

The leucopenia described as characteristic of early influenza was scarcely ever seen, but this may be explained by the fact that the patients seldom came to the hospital until the second or third day of the disease. A leucocyte count under 4,000 occurred but three times. In five cases the white count was 10,000 or over. The aver-

age count for the uncomplicated influenzas was 6,300.

With comparatively few exceptions the urine of all cases contained albumin in small amounts and often a few casts. There were never any urinary symptoms.

The group of influenza pneumonia which comprises the most desperately sick and practically all of the fatal cases presented a clinical picture differing from the above mainly in the great severity of the symptoms described. Usually the pneumonia seemed to have been a part of the disease from the beginning of the illness, but in a few its onset at the end of a few days was perfectly distinct. The condition of overwhelming toxemia was something which we have never previously seen. Intense delirium was less common than the deep stupor already mentioned and which occurred with great frequency. Except for the color of the skin the condition at times showed a strong similarity to the so-called "typhoid state."

The substernal pain, prostration, hyperidrosis universalis and other symptoms discussed above were commonly much exaggerated. Nausea and vomiting of a persistent and severe type were not uncommon. Once the vomiting was noted as a focal type. Extreme degrees of tympanites are much more frequent than in the usual type of lobar pneumonia. Several times very violent diarrhea persisted for several days.

A particularly distressing symptom to the patient has been the abnormal pain, which is often of such acuteness as to suggest an acute abdominal complication, such as mesenteric thrombosis. In one case this condition was found at operation. In the majority the cause was probably the extreme distention.

The marked cyanosis which has been such an extraordinary feature is of a nature unfamiliar to us and never seen in any other condition. Entirely unlike that so commonly met with in emphysema, pneumonia and other conditions, it is quite unique and seems characteristic of influenza pneumonia. We have come to regard it as the most important single prognostic sign. When present, even in the early stages, it indicates an almost certain fatal termination. The lips and nails are of a deep muddy purple color and the skin generally presents a dull gray tinge somewhat resembling the color in argyria. The cause of the phenomenon is not altogether evident. Clearly it is not due to the earlier

failure, as cardiac dilatation has not been present in any, and in the presence of this cyanosis the pulse was, as a rule, of good quality. The dusky color is quite similar to that observed in methemoglobinemia and is probably in large part, at least, due to changes of this nature in the blood.

The pulse rate, though higher than in simple influenza, is remarkably low, seldom going above 120 except for 24 to 36 hours before death. Often dirotic in the early stages, with very few exceptions, it remains of surprisingly good quality until the end. A very interesting bradycardia has frequently developed during early convalescence, the pulse rate in ten cases sinking to under 40 per minute. The quality remained good and after a period of one or two days invariably returned to normal. The administration of digitalis was not responsible for the slow rate, as this drug was seldom given; neither is it due to vagus stimulation, as atropin produced no effect in increasing the rate of the heart contraction.

The temperature was exceedingly variable, at times being but little elevated, at others reaching 105 or 106 degrees. No special type of fever curve is characteristic. Frequently it fell abruptly to normal just previous to death, as in the case of crisis. With recovery the temperature more often fell by lysis than crisis. In no case of the latter have we seen the immediate improvement in the general condition of the patient which is often so striking in lobar pneumonia.

The picture of the grunting, painful, distressed and rapid breathing of pneumococcus pneumonia is certainly very exceptional if ever present. Instead the patient lies flat in bed without much evidence of respiratory distress. He may admit that his chest feels filled up and he is smothered, but more often he denies any respiratory difficulty whatsoever. Case after case of the most virulent nature has had a respiration of from 25 to 30 per minute. For a few days before death the rate may increase to 60 or 70 per minute, and in exceptional cases hyperpnea or tachypnea is present earlier. The course of the pulse and the respiration are far more reliable guides as to the severity of the disease than the temperature curve which, when taken alone, is often very misleading. The combination of a high pulse and respiration under all circumstances is to be regarded very seriously.

Cough is apt to be a prominent and very distressing symptom in the pneumonia group. We have known it to be almost incessant. The sputum, which in the beginning is scanty, often becomes more or less abundant but of no constant type. It may be mucopurulent, frothy, thin mucoid, rusty or blood tinged. Except in two cases of acute bronchiectasis it has never been foul smelling and never tenacious, as in ordinary pneumonia. Several times the patients raised moderately large amounts of thin reddish secretion somewhat resembling diluted red wine. Rather profuse hemorrhages from the lungs occurred in several. In all, 34 per cent. had blood to some extent in the expectorations. Varying degrees of pulmonary oedema occurred but were never of the type of "inflammatory pulmonary oedema" described by several observers.

The leucocyte counts averaged considerably higher than in the simple influenzas, *i.e.*, 9,000 as against 6,300 per cu. mm. A count of 33,000 is recorded in one case with empyema, but otherwise none were higher than 18,000.

The signs in the chest are difficult to classify as they were so varied. Except for scattered râles over both lungs or signs of oedema, the findings were largely confined to the lower back. The earliest were found in the region of the inferior angle of the scapula and consisted either in localized râles of the crepitant or consonating variety or slight dulness over a small area with diminished vesicular respiration. It is our experience that the râles generally antedate the first signs of consolidation by at least 24 hours. All degrees of consolidation developed, but rather infrequently were the signs of marked dulness, intense bronchial breathing and bronchophony present as in the case of consolidation in ordinary lobar pneumonia. A small area of incomplete consolidation was found rapidly increased from day to day and the signs usually became more definite. Later the same evolution of signs would take place at the hilus of the other lung. The right or left lower lobe was alone involved about equally, namely, in 26 per cent. of the cases. In 38 per cent. both lower lobes were infiltrated. The remaining 10 per cent. showed consolidation in various areas of the lungs, usually several. Resolution was never prompt except in a few instances where there appeared to be good reason to assume that the consolidation was a complicating lobar pneumonia. The characteristic long-delayed resolu-

tion is entirely consistent with the nature of the pathological process in the lung, and as one views these changes at the autopsy table it is indeed difficult to imagine it otherwise. We have several times seen patients during late convalescence, when all symptoms had disappeared, who still presented signs of definite consolidation in one or both lower lobes.

COMPLICATIONS.

Until the third or fourth week of the epidemic we saw extremely few complications, but subsequently numerous and varied complicating conditions were noted. Next to the mortality from the disease, the serious consequences of the complications and sequelae are of the first importance.

Cardio-vascular System. With such a virulent type of infection it is difficult to explain why cardiac involvement is so unusual. Only once did we find reasonably definite evidence of an endocarditis. Fibrinous pericarditis developed in a single case. Clinically, cardiac dilatation was demonstrated in but one. A toxic myocarditis doubtless occurs more frequently than can be shown clinically. We occasionally saw auricular fibrillation and a severe bradycardia was present ten times.

More surprising still is the fact that old cardiac cases seemed to go through the influenza attack quite as well as those without cardiac lesions. Among nineteen cases of chronic cardiac disease only five died, and in two of these there was a further complication of pregnancy. Cardiac decompensation did not develop in any of these five fatal cases.

Mesenteric thrombosis with resulting gangrene of the gut was found once at operation. A mild phlebitis of the leg developed in two instances: one during the course of the disease, the other four weeks after onset. Both cases recovered.

Respiratory Tract. Considering the fact that the pleura shows extensive inflammation in all cases examined at the autopsy table it is unaccountable that signs of pleuritis should be so generally wanting. Pleural friction was heard in 17 cases and a small quantity of serous fluid was aspirated in two. Pleuritic pains were rare exceptions.

From September 3 to October 15 a total of only eight cases of empyema were treated in the entire hospital, while from October 15 to November 30 the total was 36. Among the cases on the Fourth Medical Service nine empyemas

were seen, four of whom died. In four the organism was the pneumococcus, in two the streptococcus, and in the three remaining, unknown.

Four cases of pulmonary tuberculosis with influenza died, one with an old process ran an uneventful course, and a sixth recovered from the influenza but with evidence that the tuberculous process has been made active.

Gastro-intestinal Tract. Other than the symptoms of meteorism, diarrhea, nausea and vomiting there were no complications in these organs except a very profuse hemorrhage from the stomach in one and from the intestines in another.

Nervous System. A single case of epidemic cerebrospinal meningitis developed in one case. Delirium and stupor already have been mentioned. The former was present in 79 cases, the latter in 59. Acute mania came on in two fatal cases and in two who recovered. In one of the latter the condition cleared up after three weeks but in the other has remained unimproved.

A complete paraplegia due to a myelitis appeared in a girl of eight on the third day after the temperature became normal.

Genito-urinary Tract. In spite of the fact that practically all severe cases had albumin and casts in the urine, not a single case of nephritis or infection of the kidneys was known to have developed.

Two cases of very mild epididymitis were seen, both in uncomplicated influenza. The swelling was only moderate and the inflammation mild. Both recovered from the primary disease and the local affection rapidly improved.

Ears and Accessory Sinuses. The occasional involvement of the middle ears has, in our experience, been very rare and of no serious import. There was no pain, and paracentesis was not necessary. No mastoid or other complications resulted. A very mild infection of the middle ear is common during convalescence. Sinusitis is hardly more important. It is a very familiar complication but always clears up spontaneously.

THERAPY

Our opinions with regard to therapy can be expressed in few words. We are entirely in accord with the usual statement that there is no specific for influenza. (The method of intravenous injection of the blood serum of individuals convalescing from influenza pneumonia as devised by Maguire and Redden and employed

by them at the Naval Hospital, Chelsea, has in their hands yielded results which are most striking and indicate that by this means the mortality from pneumonia of the influenza type can be greatly reduced.) The many different drugs recommended by therapeutic enthusiasts have no value whatsoever in combating the infection. Any favorable results obtained can be explained only on the grounds of sedative or analgesic action and not through any influence on the primary disease. Except for the employment of certain general measures as a routine every case should be treated purely symptomatically.

The first principle in treatment is absolute rest in bed from the onset of the infection. So frequently have we obtained the history that the patient kept about for a few days to a week and was then suddenly seized with violent symptoms marking the beginning of pneumonia that there is no reasonable doubt that a severe course is more common under such circumstances. It is the testimony of many physicians of large experience in this epidemic that those who went to bed with the appearance of the first symptoms nearly always recovered, while those who kept about usually had pneumonia, and a large percentage died.

In no disease is expert nursing of greater advantage.

The most precise regulation of the intestines is paramount, not only because of the necessity of stimulating the eliminative functions, but also because of the marked tendency in this disease to meteorism. In the beginning fairly free catharsis is advisable. The most intractable cases of diarrhea are often greatly relieved by irrigations of the colon with normal salt solution, boric acid solution, or a solution of sodium bicarbonate. Tympanitis is to be combated by the usual methods employed in typhoid and other diseases for its relief.

The sponge or slush bath is of great value in many cases, and especially in those where the severest degree of toxemia is not present. The benefits, though perhaps somewhat less pronounced than in typhoid fever, are yet definite. Delirium often disappears entirely, headache is relieved, and, most important of all, the vasomotor tone is stimulated. The best effects have been obtained with a bath of rather short duration (ten to fifteen minutes) and with water from 80 to 60 degrees, according to the vigor and reaction of the patient.

If the patient is in a stupor or if vomiting interferes with the ingestion of a full amount of fluids one should resort to proctoclysis or hypodermoclysis. We have found the use of the "Murphy drip" very satisfactory. By mouth fluids in almost any form may be given.

It is often quite impossible to induce the patient to take an adequate amount of food because of severe vomiting or anorexia. When possible the patient should be given a simple essentially fluid or semi-solid diet averaging from 2,500 to 3,000 calories. The list of foods allowed includes milk, cream, butter, matzoon, koumiss, tea, cocoa or coffee with milk, malted milk, soups with rice or barley, gruels, eggnogs, eggs, beef juice or scraped beef, minced chicken, crackers, milk toast, simple puddings, ice cream, custards, and fruits.

As there are seldom, if ever, serious complications in the upper respiratory or digestive tract, procedures directed to the care of the mouth, nose and throat, beyond those incident to the nursing of any individual with fever, are superfluous. To spray the nose is to invite otitis media, to gargle with strong antiseptic solutions is absurd.

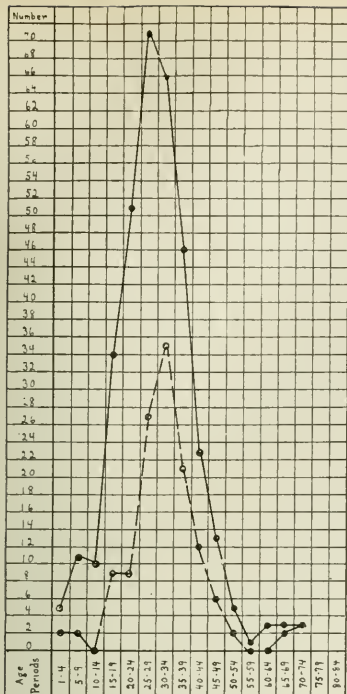
Cardiac stimulants as a routine are entirely unnecessary, as heart failure is rare. Should symptoms or signs of weakness of the heart appear, cardiac stimulants like digitalis, camphor and caffeine are indicated.

In the early stages, with great pain and headache, analgesics should be given. Acetylsalicylic acid or Dover's powders in full doses have given the best results in our hands.

Sedatives for cough or expectorants may be of some value in exceptional cases but find no place as routine measures. If the cough is excessive and distressing, codeine, heroin or morphine should be prescribed.

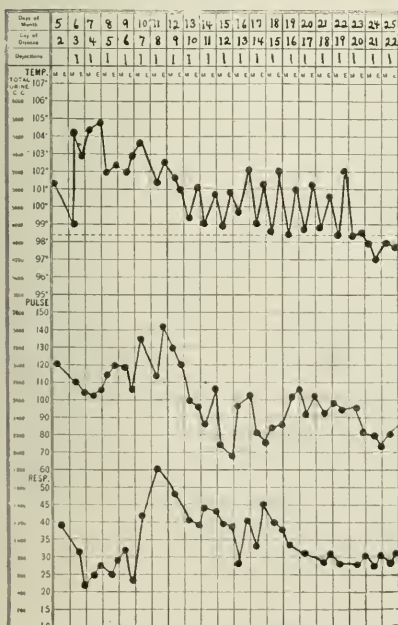
Convalescence is a time of special importance in influenza. It frequently happens that after a few days of normal temperature a bronchopneumonia sets in. It is well, therefore, to keep the patient in bed for a week or ten days following defervescence. A carefully regulated convalescence covering a period of weeks or months is more important than in the case of almost any other acute disease.

The charts illustrating Dr. Locke's paper will be found seriatim on the three succeeding pages.



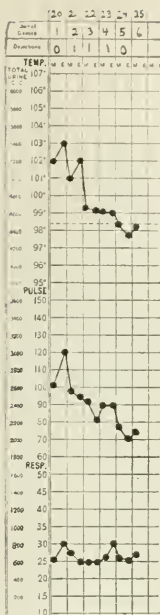
Actual Number Cases and Deaths Arranged by Age Periods
 ——— = number cases
 - - - - - = number deaths

OCTOBER



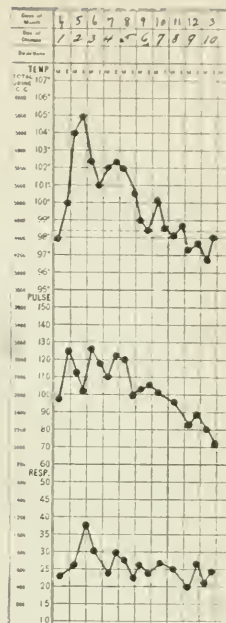
INFLUENZA AND DOUBLE PNEUMONIA—RECOVERY.

DECEMBER



INFLUENZA AND PNEUMONIA—DEATH.

OCTOBER



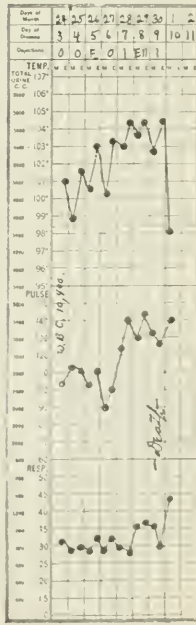
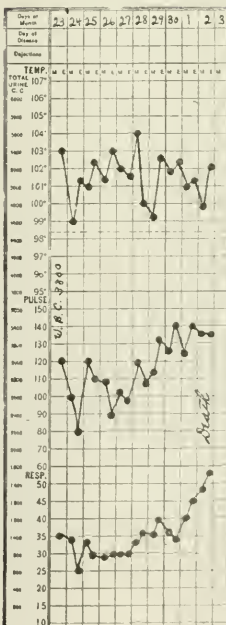
INFLUENZA AND BRONCHO-PNEUMONIA—RECOVERY.

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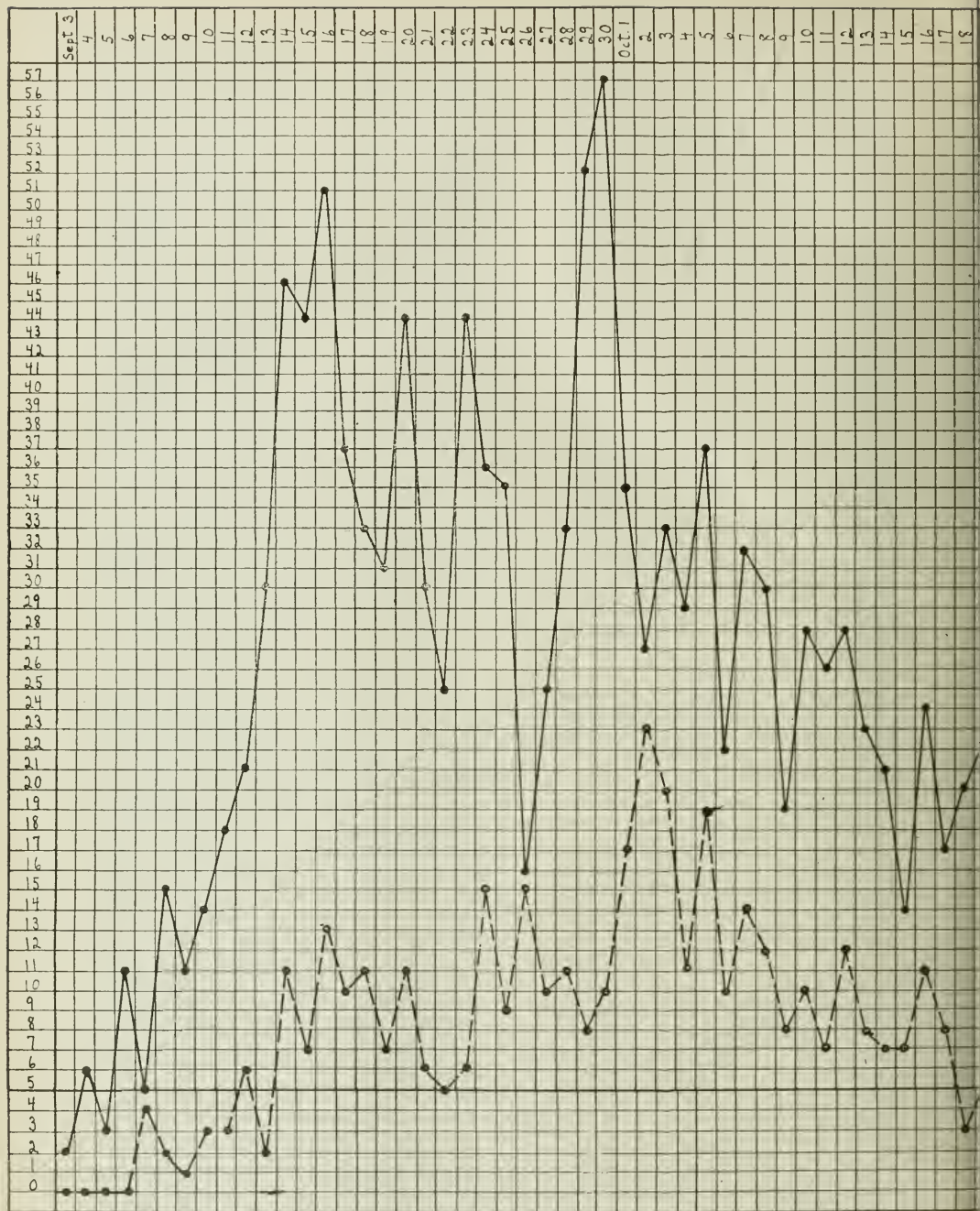
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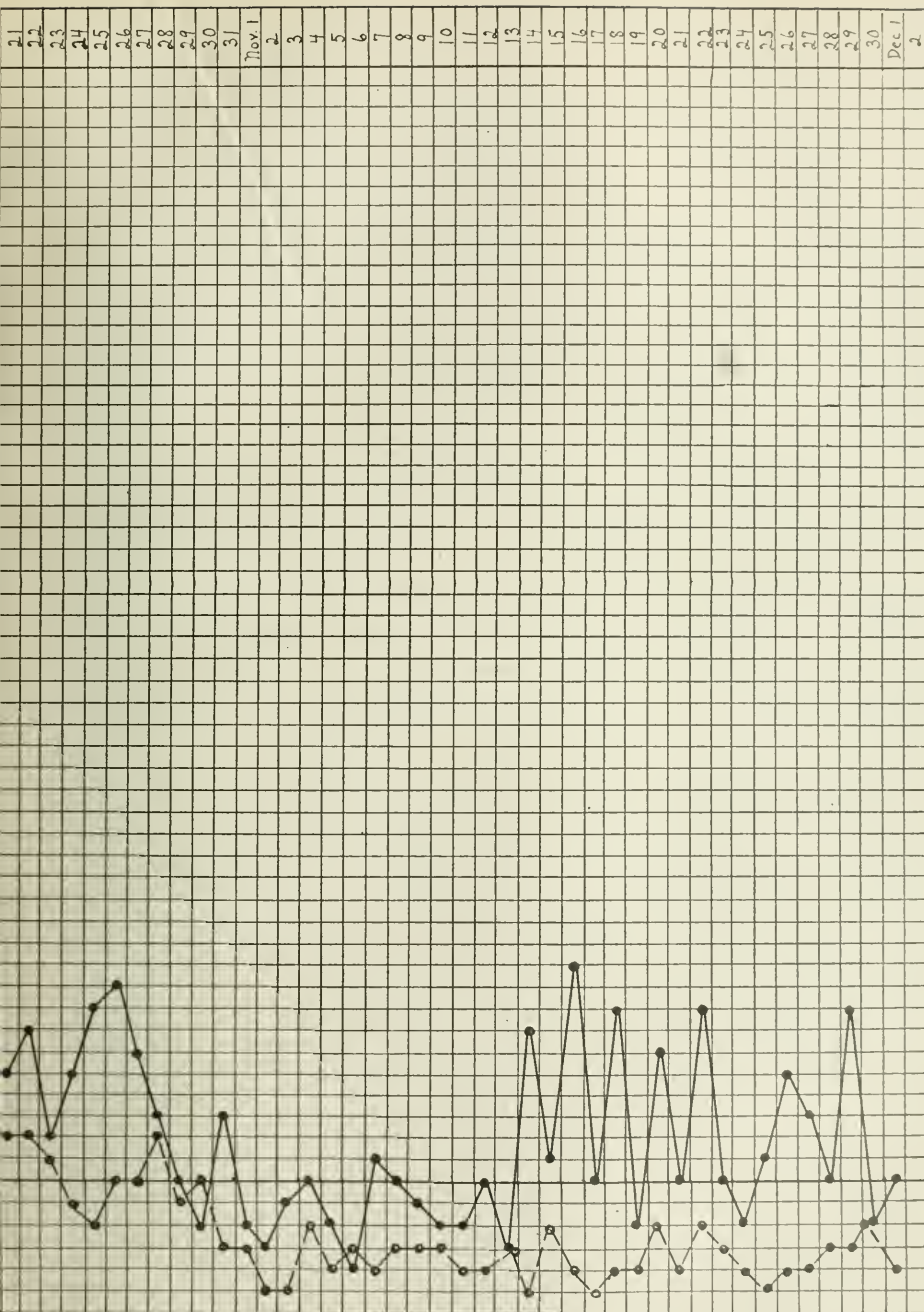


INFLUENZA AND PNEUMONIA—DEATH.



ACTUAL DAILY NUMBER OF CASES OF INFLUENZA ADMITTED AND DEATHS AT THE BOSTON HOSPITAL.

———— = CASES. - - - - - = DEATHS.



CITY HOSPITAL FROM SEPT. 3 TO NOV. 30, 1918. TOTAL 1550 CASES.
DEATHS.

Society Report.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

(Continued from page 102.)

DR. JOHN B. ROBERTS, Philadelphia: "Shock" is used to cover many symptoms following injury—anemia, fat embolism, rapid absorption of septic fluids, rapid abstraction of heat from abdominal organs. The complete recovery seen at times indicates that the basic lesion is susceptible of repair, wherever situated. Porter's conclusions relative to fat embolism, enforced inhalation of carbon-dioxide were apparently largely founded on examination of cases a good many hours after injury. Lowering of the alkaline reserve in the blood after anesthesia and operative attacks, and the beneficial effect of intravenous use of alkaline solutions have seemed to indicate a possible relation between shock and acidosis. Henderson and Haggard see a suggestive cause of surgical shock in a connection between the excessive respiration due to pain and the carbon-dioxide capacity or alkali reserve of the blood. For prevention of shock there must be avoidance of fall of blood pressure, prevention of pain, and control in severity of traumatism. Ether, the most satisfactory of the usually inhaled anesthetics, is said to reduce blood pressure, and is toxic to nerve tissue and glandular organs. Nitrous oxide with ether following, or in association with nerve blocking, is at times available. Geoffrey Marshall uses nitrous oxide gas with oxygen to lessen shock in amputation. He says shock evades exact definition. I fear his experience is more that of an anesthetist than that of an operating surgeon. Porter finds that a diastolic blood pressure of 45 to 50 mm. continued for a considerable time in a laboratory animal is followed by death by transfer of blood to the portal veins unless the animal is saved by surgical treatment. Treatment, therefore, requires that the blood pressure of the wounded, in war or civilian practice, be raised above the critical point. Elevation of the feet and intravenous injection of saline solution will raise diastolic blood pressure to 70 or 80 mm.; such procedure is to be used in addition to elevation of legs and trunk. Adrenalin may be employed in addition if the pressure falls again. Too much saline solution may increase hemorrhage in oozing wounds,

unless hemostasis or operation and hemostasis have been successfully employed. Transfusion of blood is then acceptable, but hemostasis must also be looked after. External heat is of the highest importance. Pressure is to be made on wound and not by tourniquet above the wound. Geoffrey Marshall's objection to morphia is probably founded upon anesthetic observations rather than upon the study of clinical surgery as an operating surgeon. C. L. Gibson of New York strongly advises the use of morphia to prevent shock, stating that its generous use makes the journey of the wounded man to the next station comfortable; also that it has been found to be of great value previous to operations with a marked effect in diminishing shock. The preliminary hypodermic use of morphia and atropia will probably convince operators that Geoffrey Marshall's objection to ether in amputation cases is probably not well founded. Surgical shock has nothing to do with "shell shock." Surgeons must remember that saline solution is not well absorbed in shock cases; it may take some time to get the beneficial effect of gravity and intravenous medication. Frequent blood pressure observations combined with temperature observations will determine the indications for cessation or diminution of activity in treatment.

DISCUSSION.

DR. S. J. MELTZER New York: I shall first take up the theory of acapnia. It assumes that shock is due to a diminution of CO_2 in the blood of patients in shock. This assumption suggests at the same time the treatment; it consists in letting the patient breathe some carbon dioxide, or let him respire through a long tube or, as it is called for short, rebreathing. The theory of acapnia as the cause of shock is about ten years old; it was brought forward by Dr. Yandell Henderson. If the statement that CO_2 of the blood is decreased in shock were generally confirmed, the fact of the reduction of CO_2 could not prove the correctness of the acapnia theory. The reduction of CO_2 may merely be a *consequence* of shock and not the *cause* of it. A successful treatment of a disease by a method which was devised upon a certain assumption of the nature of the cause of the disease, never proves that the assumption is necessarily correct. Geoffrey Marshall, an expert anesthetist, is of the opinion that rebreathing is rather a dangerous procedure and surely might not to be used in shock patients. Acapnia

and rebreathing die hard but, as far as the science of physiology is concerned, they are surely dying. Then I wish to discuss another phase in the physiology of shock. Low blood pressure is a predominant symptom of shock. For at least six decades physiologists firmly believed that low blood pressure was accompanied by a relaxation of the peripheral small blood vessels which leads to the accumulation of the greater part of the body's blood in the vessels of the abdominal viscera. In recent years the assumption gained the ascendancy that in shock the peripheral blood vessels are contracted. Surgeons have stated that they have never found the vessels of the abdominal viscera to be engorged in shock. In England and in France Dr. Cannon had occasion to study shock experimentally as well as clinically. He became converted to the theory that the most essential factor in the production of shock is acidosis and began to advocate the treatment of shock by the administration of bicarbonate of soda. Recently the theory of acidosis as the primary cause of shock lost ground. Bayliss himself gave up the idea that acidosis is of primary importance in shock, and he, as well as others, lost faith in the value of the alkaline treatment of shock. I now come to the theory that shock is produced by pulmonary fat embolism which received a great deal of popular attention. The article of Professor Porter in the *Atlantic Monthly* reads indeed like a most attractive novel. The sentences are crisp and the style and manner of presentation are most attractive. But in science and in practice of medicine we are more interested in the truth and the practical value of the facts than in the beauty of their presentation. There is much in Dr. Porter's statements which we may readily accept. No doubt there are cases in which fractures of the long bones, or injuries to fat tissues lead to pulmonary fat embolism and to a dangerous and even to a rapidly fatal fall of blood pressure. But these facts are in no way new. Dr. Porter himself admits that shock brought about by injuries to the abdomen may be due to "change in the hydrostatic conditions of the circulation" in the abdomen and not to fat embolism. Fat embolism, a grave condition, presents a number of definite clinical symptoms outside of the presence of low blood pressure. There are, in the first place, symptoms which point directly to the lungs as the seat of trouble. The patient is suffering from air hunger; dyspnoea, pulmo-

nary edema and even hemoptysis are frequently present. On auscultation the presence of râles may be discovered. Then there are indications of the presence of fat in the circulation in abnormal quantities. The urine contains fat globuli. Fat may be readily detected in a drop of blood. Moreover, even the sputum may reveal the presence of fat. There are then many clinical signs which point that the shock-like condition of the patient is being due to pulmonary fat embolism. Dr. Porter does not mention in his articles that he availed himself of these signs. Dr. Porter recommends the inhalation of carbon dioxide for the treatment of shock and claims that he has helped many such cases by this treatment. Porter administers carbon dioxide not for the purpose of meeting the possible exigencies of acapnia, but for the purpose of producing deep inspirations, which, according to him would help "drive the blood from the engorged abdominal veins into the chest, where it shall fill the half empty heart and permit the faithful organ to fill the capillaries." Wiggers says that if the circulation from the right ventricle is impeded by capillary emboli in the lungs, the introduction of larger quantities of blood in the right ventricle might lead to the dilatation of that ventricle and to death. According to Wiggers, shock is distinguishable from pulmonary fat embolism by the difference of the pressure in the right ventricle and the pulmonary artery; in pulmonary fat embolism the pressure is rather high, while in shock it is low. Therefore, while in shock it is advisable to drive, by any effective methods, the blood from the veins of the abdominal cavity into the right ventricle, this procedure has to be avoided in cases of pulmonary fat embolism. As a friend of Professor Porter it is to me an unpleasant performance to criticise his contributions to our knowledge of the nature of shock and its treatment. But I feel that I owe a duty to the science and practice of medicine in our country to state frankly to my brothers in medicine my estimate of Porter's theory of shock as well as of his therapeutic advice: I believe that neither of them rendered a practical service to medicine. What I have just said regarding the expression of my views on Professor Porter's theory is true of my criticism of all the three theories. The men who propounded them are leading figures in physiology of this country. I am proud to claim to be their friend.

(To be continued.)

Book Reviews.

The History of the Boston Medical Library.

JOHN W. FARLOW, M.D., Librarian. Privately printed by The Plimpton Press, Norwood, Mass. 1918.

Dr. Farlow deserves much credit for hunting up the almost forgotten beginnings of the Boston Medical Library and presenting them to the medical profession in such attractive form. Connected with the Library for twenty-four years, he early felt the stimulus of J. R. Chadwick's personality, absorbing his enthusiasm for the collecting of books and developing a facility in the work all his own. His book of 240 pages, illustrated with 31 half-tones, is divided into ten chapters, with the following titles: The First Boston Medical Library, 1805-1826; Founding of Present Library—Rooms in Hamilton Place, 1875-1878; No. 19 Boylston Place, 1878-1898; Removal to the Fenway—Dedication and Description of New Building; Attempt to Form An Academy of Medicine; First Medical Meetings Held by the Library; Numerous Accessions; Growth and Government of the Library.

The work is a continuous story, giving the necessary dates and facts but not burdened with too much statistical matter. Reports are skillfully summarized; the growth of the Library from small beginnings is traced year by year; the donations are referred to and the most important featured. A valuable item is the list and description of the portraits of noted physicians in the successful loan collection exhibit in connection with the dedication of the building at 19 Boylston Place.

The illustrations are remarkably satisfactory. Every physician will be glad to see portraits of Mrs. F. J. Collins, cataloguer, and Dr. E. H. Brigham, assistant librarian, both of them for a lifetime connected with the Library. The photographs of the present building, both exterior and interior views, are unusually good and those of the former homes of the Library will recall pleasant memories to the older members of the profession.

The book is a piece of good historical writing and a credit to the author and to an important medical institution. It can be obtained at the Boston Medical Library, No. 8, The Fenway, Boston. Price, \$2.50

Essentials of Dietetics. By MAUDE A. PERRY, B.S. St. Louis: C. V. Mosby Company. 1918.

This volume is a valuable textbook for nurses. It deals with dietetics and is divided into two parts. The first considers the composition of food, its nutrient value, and its utilization by the body. The physical properties, source, composition and function of food are discussed, and various factors, such as work

and rest, age and sex, weight, build, climate and season, health and disease, are considered. Nitrogenous and non-nitrogenous foods are classified and considered with reference to their functions and value. One chapter deals with the care and preservation of food and describes the changes produced by cooking.

In the second part of the book, the principles underlying the use of foods which are beneficial in certain diseased conditions are explained. Diets are suggested for infants and children and for persons suffering from diabetes, nephritis and heart disease, fevers, tuberculosis, diseases of the stomach and intestines, liver disturbances, rheumatism, gout, and obesity, skin diseases, and scurvy. "Pre-" and "post-" operative diets are also given. The book is arranged in an unusually comprehensible form and furnishes an excellent reference book for nurses.

Exercise and Set-up. By SAMUEL DELANO, M.D. Boston: The Four Seas Company, 1918.

Proper exercise in health and disease is that which takes in consideration chiefly the function of the internal organs and not merely the development of muscle groups.

To make this clear the author takes up in some detail the physiology of respiration and circulation. He explains in which way exercise may aid the function of the thorax, the lungs and the heart. He shows the influence of poor posture on those organs and presents a system of set-up exercises for which he claims entire originality. As the main part of his system consists in teaching correct breathing we cannot quite consent to his claims, but we are in thorough agreement with the author concerning the deplorable neglect of rational exercise in health and disease.

What he says in particular about the abuse of sports and games is excellent and should be read by all who have an interest in the physical education of our youth.

The book, often decorated with philosophical and poetical remarks, is worth while reading, and both physicians and physical teachers will undoubtedly find many helpful suggestions. It is written chiefly from the point of view of the internal physician and does not take up the numerous problems with which the surgeon and neurologist have to deal, nor many problems of the orthopedic surgeon.

We regret that the author has not escaped the temptation to which many books on this and allied subjects have succumbed, namely to criticize harshly all others who have studied the problem of exercise.

We feel that in a later edition the book would gain in value if it were deprived of its somewhat sensational accessories.

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RECENT DECISIONS OF MASSACHUSETTS INDUSTRIAL ACCIDENT BOARD.

THE liberal state of mind of the Industrial Accident Board towards physicians and hospitals is shown by its decisions, particularly several recent decisions which are printed in another column. Ever since the Workmen's Compensation Act was passed, insurers have made strong efforts to down medical costs and charges of all kinds, and it is believed that if it were not for the provision in the law which gives physicians and hospitals a right to a hearing before the Industrial Accident Board, these efforts would be successful.

It is known to all members of the profession that everything that goes into the care of injured employees in hospitals has increased, and even the services of the physician himself are worth more, because of the rising cost of everything that is ancillary to his profession, including the cost of living for the doctor and his

family, and the cost of the various things which are incidental to his office and work.

The Massachusetts General Hospital is admittedly a hospital performing service of the highest character. Not allowing its staff to charge for services, the trustees found it necessary to increase the charge for patients who are able to pay to a flat ward rate of \$17.50 per week. This charge was disputed by some insurers and as a result, a hearing became necessary. This is the case of Joseph Ammendolia, an employee of the Plymouth Rubber Company, insured by the American Mutual Liability Insurance Company. The only question at issue in this case was whether or not the new rate of \$17.50 was a reasonable charge for the services rendered. The Industrial Accident Board disposed of the matter in a brief, but adequate finding, "that \$17.50 is a reasonable fee per week for the services rendered by the Massachusetts General Hospital in the above case. This is not a discriminatory rate, but is the standard rate charged by the hospitals for all patients who are able to pay." The far-reaching import of this case is evident.

In another case, involving the question as to what constitutes an "unusual case" under the law, in which the United States Casualty Company questioned its liability for the payment of a doctor's bill of \$150 and hospital charges aggregating \$304, for services rendered John Brady, an employee of the Shoe City Express Company, the Industrial Accident Board made a broad ruling awarding the bills as rendered and stating its idea of what an unusual case is. The Board says, in part: "The evidence shows that this case is unusual; that it is a case out of the common run of cases, in view of the nature of the injury and the complications following such injury. The usual case and the usual personal injury arising out of the employment are those cases and injuries which require ordinary medical treatment and care and go along uneventfully to their termination, and they may or may not require treatment for a longer period than two weeks A case may be unusual because the nature of the injury, its particular location, and its extensiveness necessarily entail a prolonged disability; that is, longer than the usual. It may be unusual, because of any interruption of convalescence of such a nature as not to occur commonly in that particular class of cases and because it is likely, unless specially treated, to

jeopardize the probability of a speedy recovery from a medical standpoint and the employee's early restoration to his position as a wage-earner."

The Industrial Accident Board has made the most of a law which has been difficult to administer in all of its phases, but particularly in regard to its medical aspects. We know of no other commonwealth in which the requirement that a case be "unusual" is a part of the law, when medical expenses are allowed after the first two weeks. Many of the laws have definite limitations as to the amount of liability of the insurer, usually in the neighborhood of \$100; but no law is so difficult of interpretation as our own law, with respect to "unusual cases." The Court found it so difficult to interpret that in the only case in which an appeal was taken from a decision of the Industrial Accident Board upon this question, *Huxen's Case*, 226 Mass. Supreme Court Reports, page 292, Chief Justice Rugg failed to go into the meaning of the words, "unusual case," and disposed of the Board's decision by saying: "It is not in the ordinary case requiring longer medical attendance that the discretion of the Board may be exercised to charge this attendance to the expense of the insurer. It is only in 'unusual cases' that they may do so. There would be grave doubt whether a case where the employee is able to go from his home in Cambridge to an office in Boston could be so unusual as to be within the purview of this Act."

And that is all the light thrown upon a dubious situation by the highest Court in our Commonwealth. The Industrial Accident Board, in its latest and most important ruling, so far as physicians and hospitals are concerned, has made an attempt to construe the law fairly liberally, and in the light of its primary intent and purpose, so that if the case is taken to the Supreme Judicial Court by the insurer, that tribunal must, of necessity, either adopt the Board's interpretation, or seriously hamper the Industrial body in its administration of the law.

describes the splendid service which has been rendered the members of the Navy. The health of the men has been of primary concern, and the rapid expansion in personnel and material which the war has made necessary has made the medical service a problem of much greater proportion than in former years. The country's unpreparedness for operations of such unexpected magnitude as those we have been compelled to undertake has increased the difficulties with which the Department has been confronted. In spite of these conditions, however, the health of the Navy has been excellent and the mortality rate low.

The Medical Department of the Navy has been greatly enlarged since our participation in the war. A year ago, the medical personnel included approximately 1800 commissioned officers; since then, 1200 additional officers have been enrolled, giving a total of 3000. The department has exhibited marked professional ability and initiative. Overseas activities have called for about 400 medical officers for duty with base hospitals, the marine brigade, aviation stations, naval bases and cruising vessels, and in transportation service.

The Dental Corps of the regular service has expanded proportionately with the growth of the medical service. At the outbreak of hostilities there were available 30 dentists; this number has been increased to over 500. The special course of instruction in oral surgery conducted by the Evans Institute of the University of Pennsylvania has been made available for Navy dental surgeons, and many have been benefited by it.

During the past year, 1,128 nurses have been assigned to duty in the Navy. The Hospital Corps has expanded with the increase of Navy personnel. The following figures show the growth of hospital service:

July 1, 1916	1,585
July 1, 1917	7,000
July 1, 1918	14,718

The professional work of the naval hospitals has been of the highest character. In establishing Navy base hospitals abroad, tact, patience, and ingenious management have overcome many of the unfavorable conditions with which it was frequently necessary to work. At Brest, two hospitals have been equipped, each with a capacity of 500 beds. At Leith, provision has been made for 600 beds, and at Queenstown, for 300. In this report, detailed

ANNUAL REPORT OF THE SURGEON GENERAL, U. S. N.

THE annual report of the Surgeon General of the United States Navy for the year 1918

description of the work at naval hospitals at home and abroad is given.

The division of psychiatric research has been valuable in maintaining the mental efficiency of the Navy by weeding out recruits who, by reason of latent insanity or mental inferiority, would have proved themselves eventually unfit for military service.

In the field of preventive medicine, the Medical Department deserves commendation, for in spite of the unparalleled expansion of the Navy and the inevitable disease-producing factors incident to the crowded conditions of war, the division of sanitation has overcome many of the problems with which it was confronted at the time of our entrance into the world conflict. Health conditions in each of the Naval Districts are considered in detail, and statistical tables of diseases and injuries are included in this volume.

The problems with which the medical service of the United States Navy has had to deal since our entrance into the war have been unparalleled in history. With the organization now at the country's service, supported by the coöperation and efficient service of medical officers, dental officers, female nurses, hospital corpsmen, and civilians, we may look forward to the future with assured confidence.

REPORT OF THE SURGEON GENERAL OF THE ARMY.

THE Surgeon General of the Army has recently submitted the one hundred and thirty-first annual report for the year ending June, 30, 1918.

During this period the tremendous amount of work which has been done by the War Department in increasing, equipping and transporting troops over seas is unparalleled in the history of our Nation. In April, 1917, when the United States formally entered the conflict, there were less than one thousand trained commissioned officers in the Medical Department. Now it is comprised of a larger personnel than the entire Army consisted of in the Spanish-American War twenty years ago. Never before in the history of the world have armies been so well protected against sickness and death from sickness as during the last four years, and with the splendid support of the

medical profession and the people, the United States Army Medical Corps has been enabled to produce an unexcelled system which includes first-aid dressing stations through to the reconstruction hospitals. Indeed, before the first troops left the States for foreign service, an advance unit of medical men preceded them. Directly there were established in America three schools for intensive training for physicians who were to take upon themselves, as officers, the new duties of the health conservation of the Army. The consequent expansion of the Medical Department to meet the emergency may be best realized from the following figures:

	JUNE 30 1917	JUNE 30 1918
Medical Corps, including Medical Reserve Corps	4,125	23,274
Dental Corps, including Dental Reserve Corps	86	2,977
Veterinary Corps, commissioned officers	57	1,539
Sanitary Corps	—	1,159
Army Nurse Corps,	1,176	12,186
Enlisted Medical Department, all branches	16,773	153,295

The steady increase in the number of troops and the mobilization of men from all parts of the country and from every condition of life left much to be done at home as well as overseas. Problems of camp construction, of sanitation, housing, clothing, feeding, etc., were confronted and surmounted with a skill which cannot deserve too great praise. Physical examination of recruits was conducted many times under the greatest difficulties; and if, as a consequence, many men were found not physically perfect after induction into the ranks, it is not a surprising condition when one considers the frequently changing examining personnel and the number of men who were examined by physicians to whom the experience was an entirely new one.

Only a brief discussion of the work of the Medical Department with the American Expeditionary Forces abroad is incorporated in this report because of the importance of military secrecy. A brief outline of the work of the American Red Cross is also given, that voluntary arm of the government which renders so much and such valuable assistance in civilian as well as military disasters. The Division of Sanitation has, by its protection measures, reduced the danger from typhoid fever and intestinal diseases to an almost unbelievable degree in comparison with the morbidity from these diseases during the Spanish-American War.

The report is replete with statistical tables of every description from every division of the department and the general activities of the entire Medical Department of the Army are reviewed under the following headings: Health of the Army—A Comparative Study, 1820-1917; Mobilization of the Army (with descriptions in brief of the mobilization camps throughout the country); Health of the Army by Countries; Special Diseases in the Army; Fractures and Operations; Activities of the Medical Department (including reports of every division in the Department) and the Financial Report of the Major General to the Secretary of War.

REPORT OF THE PUBLIC HEALTH SERVICE.

THE annual report of the Surgeon General of the Public Health Service for the fiscal year ending June 30, 1918, is now ready. This is the forty-seventh annual report of the Service, covering the one hundred and twentieth year of its existence. The field work of this commission was successfully conducted during the year under the following divisions:

1. Scientific Research.
2. Domestic (Interstate) Quarantine.
3. Foreign and Insular (Maritime) Quarantine and Immigration.
4. Sanitary Reports and Statistics.
5. Marine Hospitals and Relief.
6. Personnel and Accounts.
7. Miscellaneous Division.

Since the winning of a war depends very largely on the health of the army, and in the present war a considerable per cent. of the United States Army consisted of men taken directly from civil life, the importance of Public Health work as a war measure has impressed itself upon the nation as a whole more strongly, perhaps, than ever before. Although many of the important developments of the work of this Commission occurred after the expiration of the fiscal year, they are noted in this report as of more than passing interest. As an aid to the more effective carrying out of the work, the President, on July 1, 1918, issued an Executive order coöperating and placing under direct supervision and control of the Treasury Department all agencies concerned in the activities of public health work in the prosecution of the war; and on October 27th a Public Health Service Sanitary Reserve Corps was created. The re-

port of the work of this Service and the successful solution of the many problems which had not previously been viewed in the light of a national emergency, furnishes an interesting study. With the establishment of training camps, munition factories, shipping plants, etc., in all parts of the country it was necessary that the conditions of industrial hygiene be strenuously supervised. The efforts of the Public Health Service were directed, therefore, along the following general lines: Diseases of man; occupational diseases and industrial hygiene; public health organization and demonstration; school and mental hygiene; rural sanitation; investigation of pollution of streams; pollution of coastal waters, industrial wastes, sewage disposal, coöperation with Bureau of Chemistry, leprosy studies, studies at Hygienic Laboratory, control of biological products, control of manufacture of arsphenamin, conference with State and territorial health authorities, representation at meetings, and dissemination of information.

The work is reviewed at length under the divisional headings and a complete survey of each very important problem is contained in the report. An especially important branch of the work was that done by the Division of Scientific Research and Domestic Quarantine in sanitating the extra-cantonment zones. A rather lengthy report of the results obtained by the joint coöperation of these two divisions is given. Statistical tables of finance are printed in detail, as are also other tabular reviews of physical examinations, diseases and injuries, surgical operations, etc. As a result of this extensive work there has been a noticeable increase in the demand for public health bulletins, particularly in the rural districts; the public health nursing service has been more appreciated; and the splendid co-operation between the people and the health service has been a large factor in aiding the personnel of the United States Public Health Service successfully to carry on the increasing activities of the work.

DEMAND FOR INDUSTRIAL PHYSICIANS AND SURGEONS.

THE demand upon the newly established Working Conditions Service of the U. S. Department of Labor, for industrial physicians and surgeons, has grown so rapidly that the Service

has been compelled to establish a bureau of registry of physicians specially skilled in this growing phase of medical and surgical specialization.

Manufacturing interests throughout the country are becoming impressed with the vital necessity of properly safeguarding the lives and health of employees, not only from the viewpoint of the new humanitarianism, but from a sense of business foresight.

The new registry bureau is prepared to furnish industries with the names of skilled industrial medical advisers on request. The demand for competent medical directors for the factory departments of hygiene are being met by the Service with an adequate list of physicians, all of whom have had experience and training in this particular function. Hundreds of such physicians are listed in the Government's registry bureau in Washington and hundreds are being added to the registration files.

In each instance the Service satisfies itself of the training of the physicians before their names are allowed on the list. Thus, only those best qualified are listed and manufacturers have the advantage of knowing that by availing themselves of this Service their dispensary section will be in competent hands.

In addition to submitting names from the physicians' registry bureau, the Service is making investigations—only on request, however—of the general facilities for protecting the lives and health of employees. The work is carried on from branches of the Service now being established within easy reach of the nation's industrial centers. When such surveys are concluded a report of the findings, with recommendations, is delivered to the responsible head of the particular industry. In this manner industries are assured reliable and unbiased information from authorities who have studied industrial problems exhaustively, with expert training in hygiene, sanitation and related subjects.

Employers and employees have expressed approval of the plans inaugurated by the Working Conditions Service, and have shown a desire to coöperate in the establishment of factory hygiene departments. From the viewpoint of national welfare it is a mighty stride toward bringing employees and employers to a recognition of common purpose and mutual benefit, and the demands upon this newly established Service can be interpreted only as indicative of the value of the medium that has arisen most opportunely.

MEDICAL NOTES.

CONTROL OF MALARIA.—The work of the Public Health Service in controlling malaria in and about cantonments in the United States has made this disease comparatively inconsequential in the present war. In freeing various areas from mosquitoes, 2500 miles of ditches have been dug and 1200 square miles of swamps have been drained. 700 technical experts and 3000 laborers were employed in the anti-malaria campaign last fall. This force will be reduced on March 1 to 150 experts and 600 laborers. But most of these men, instead of returning to their former peace-time occupations, will enter the employ of cities and towns in which they operated for the Government. Those municipalities have seen what can be done to control malaria and they have decided to continue the work.

In addition to safeguarding areas exclusively under military control, it has been necessary to control, also, civilian areas surrounding camps. This work has involved supervision of water, food, and milk supplies in the areas to which the soldier and sailor has access, the proper disposal of sewage, the elimination of breeding places of flies, mosquitoes, and other insects.

The necessity for the prompt action to protect the health of the soldier was so pressing in the early days of the war that it was necessary in some instances to do work which should have been done by the local authorities.

In the areas near some of the cantonments many cases of malaria were reported each year previous to the construction of the camps. Since the building of the camps few cases have been contracted. A survey at one of the aviation camp sites previous to its acceptance showed that all families living on the property had malaria last season. Anopheles mosquitoes were numerous. In the same territory this year the commanding medical officer reports no new cases of malaria contracted and an absence of anopheles. The area protected varied with the size of the cantonment and the cantonment towns. The smaller areas consisted of eight to fifteen square miles. Some of the largest areas covered ninety square miles. Towns whose normal growth has been seriously retarded by malaria have seen thousands of American soldiers live with practically no malaria and now appreciate that their industrial plants can be kept in similar efficient condition by following the Army method.

GOVERNMENT APPROPRIATION.—A resolution for appropriating \$100,000 for government aid in fighting influenza has been passed by the United States Senate.

RECURRENCE OF INFLUENZA.—Federal authorities think that influenza may recur at intervals even later than in the spring, although it is probable that it will present itself in a less virulent form. The cause and transmission of the disease has not yet been definitely determined. Many experiments have been tried, some with considerable success; but authorities have not been able to stop the epidemic effectively in any city or town. The epidemic has run its course in spite of preventive and experimental measures which have been adopted.

Throughout the world, millions of deaths have been caused by this disease. The loss of life has been greater in some of the European countries than in the United States. Deaths in the United States in 1918 will not be tabulated before spring, probably not before July 1. Sufficiently accurate records are at hand, however, to make an estimate on percentages. Dr. Rupert Blue, chief surgeon of the United States Public Health Service, estimated a month ago that the deaths at that time totalled 370,000. Fatal cases in the last few weeks have carried the total beyond 400,000. It has been estimated that the total will soon be more than half a million. From 10 to 20 deaths are reported in Washington every day. Health authorities have experimented with many vaccines, but no one of them has been found completely satisfactory.

COBLENZ BIRTH RATE.—A careful investigation of the statistics of the city of Coblenz for the past six years gives the following results: In 1913 the birth rate was 217, death rate, 153; 1914 birth rate, 221; death rate, 204; 1915 birth rate 207; death rate 223; 1916 birth rate, 189; death rate 221; 1917 birth rate, 148; death rate, 220; 1918 birth date, 156; death rate, 291. The increase in the death rate last year was due to grip epidemic and also to rise in the tuberculosis mortality. The death rate among children, which has been high, is attributed to deficiency in milk.

DRUG PRICES.—The weekly report on the price of drugs shows that there is a scarcity of many commodities, particularly botanical drugs, a condition which causes prices to remain un-

changed in many instances. In the case of a few pharmaceutical chemicals there is larger production and consequent decrease in price. Spices used in the manufacture of drugs and oils remain high but are gradually becoming lower because of larger importations. Canary seed, dill, poppy, and foenugreek are lower. The price of aniseed and domestic sunflower seed has advanced. Potassium iodide crystals, silver nitrate, and denatured alcohol prices have been lowered. Rhubarb chips and high dried rhubarb have advanced in price. Narcotics are steadily demanded and the prices remain steady.

In heavy chemicals there is a tendency to limit purchases to small quantities. Formaldehyde is scarce and higher in price. Bichromate of soda is more steady. Caustic soda closed at \$365@370 per hundred pounds, and soda ash at \$1.80@2.00 a hundred. Copperas is quoted at \$2.00@2.25 per hundred pounds. Bleaching powder is offered at \$2.00@2.25 per hundred. Potash alum is scarce.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Jan. 11, 1919, the number of deaths reported was 478, against 314 last year, with a rate of 31.30, against 20.87 last year. There were 55 deaths under one year of age, against 48 last year.

The number of cases of principal reportable diseases were: diphtheria, 67; scarlet fever, 37; measles, 11; whooping cough, 10; typhoid fever, 1; tuberculosis, 57.

Included in the above were the following cases of non-residents: diphtheria, 7; scarlet fever, 8; tuberculosis, 6.

Total deaths from these diseases were: diphtheria, 4; scarlet fever, 1; measles, 1; whooping cough, 1; typhoid fever, 1; tuberculosis, 21.

Included in the above, were the following non-residents: typhoid fever, 1.

SPRINGFIELD ACADEMY OF MEDICINE.—The January meeting of the Springfield Academy of Medicine was held at 137½ State street, Springfield, Massachusetts, on the evening of January 14, at 8.30 o'clock. Dr. F. B. Sweet gave a report of fracture cases, and an address, "Reflections on Current Psychopathic Practice in Massachusetts," was delivered by Dr. E. E. Southard of Boston. There was discussion by Dr. Philip Kilroy, Dr. John A. Houston, and others.

CHICKERING HOUSE.—The object of Chickering House, Dedham, is to provide a place, open throughout the year, where women, tired by their work, their household cares, or convalescing from an illness, may obtain for a nominal sum, through fresh air, good food, and change of scene, the rest that will enable them to return to their usual duties restored in body and mind. The annual report for 1918 indicates that the health of the officers and patients has been good during the past year. Little medical attention has been demanded of the visiting physician. Since its establishment in 1911, 2,312 patients have been admitted. Of this number, 438 were cared for during 1917-1918.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—On January 7, deaths from influenza throughout the state aggregated 60, of which 48 were in Boston. Springfield reported four deaths, Northampton three in three days, Cohasset two and New Bedford three in two days. The state health officials regard these reports as indicating a low death rate. The whole number of new cases reported was 2058, which shows no alarming increase of the disease.

On January 7, 331 visits were made by nurses to the homes of influenza patients for purposes of giving personal instruction in methods of preventing the spread of disease. Gauze masks were provided and instruction was given in the use of them.

On January 8, 260 cases of influenza were reported to the Health Department of Boston, and 10 of lobar pneumonia. There were 38 deaths reported from influenza and 7 from pneumonia. Forty-five deaths and 2087 new cases of influenza were reported to the State Department of Health. Eighty-seven cities and towns reported, 21 sending figures covering from two to seven days.

Deaths were reported from Northampton, 6 (three days); Springfield, 4; Attleboro, 3; Tisbury, 1.

New cases were reported from Fall River, 36; Brockton, 30; Brookline, 44; Cambridge, 109; Quincy, 57; Haverhill, 82; Lynn, 61; Malden, 45; Salem, 49; Saugus, 132 (several days' report); Concord, 127 (seven days); Lowell, 85; Medford, 49; Somerville, 95; Newton, 63 (two days); Worcester, 74 (several days' report); Springfield, 28.

It may be fairly stated that the number of

cases reported within the last few days has indicated a distinct decrease. It is reasonable to expect that the death record will follow that course within a few days. The record with respect to lobar pneumonia tends more to remain stationary, which may be expected in view of the fact that pneumonia is ordinarily prevalent during this season of the year.

In Leominster the schools have been closed because of the epidemic conditions among the teachers and children. There are over 600 cases of influenza and measles.

On January 9, 236 new cases and 25 deaths from influenza were reported in Boston, with 29 new lobar pneumonia cases and 4 from that disease: 14 of the lobar pneumonia cases cover a period of two or three days.

Reports to the State Department of Health show a marked decrease in new cases of influenza; 1300 new cases and 45 deaths were recorded.

The list of deaths as reported were as follows: Attleboro, 3 (two days); New Bedford, 1, and Winchendon, 2 (four days).

The largest number of new cases reported were: Everett, 17 (two days); Leominster, 72 (12 days); Worcester, 65 (several days); Winchendon, 58 (six days); Somerville, 45; Waltham, 44; Attleboro, 55; Malden, 38; Andover, 38 (five days); Haverhill, 37; Lowell, 22; Beverly, 23; Walpole, 22; Cambridge, 21; Quincy, 20; Fall River, 27; and Clinton, 19.

It is generally believed that although reports of cases of influenza and pneumonia may still be incomplete, the reporting system has become sufficiently stabilized to constitute it an index to the prevalence of influenza and pneumonia, and that the diminished number of cases reported indicates a diminished prevalence of these diseases. If this be so, there should, with the next few days, be a falling off in the number of deaths recorded.

On January 10, 202 cases of influenza with 25 deaths, and 10 new cases of lobar pneumonia with 11 deaths were reported to the health authorities of Boston.

Dr. Woodward is reported to have issued the following statement:

"The average number of deaths reported daily last year during the week corresponding to the week now current was 8, and the average daily number of deaths due to pneumonia during the current week is but 7.

"It may be fairly concluded, therefore, that

lobar pneumonia and broncho-pneumonia are no more prevalent at the present time than is usual at this season, and that deaths from influenza are showing no tendency to decrease.

"It is well to remember that the precautions advised for the avoidance and the prevention of influenza are equally to be advised for the avoidance and prevention of lobar-pneumonia and of the diseases generally to which broncho-pneumonia is a sequel, such as whooping cough and measles.

"These precautions are those that look toward the prevention of the transfer of mouth and nose secretions from infected persons—carriers and patients—to the mouths and noses of susceptible persons who are not yet infected, and toward the maintenance of the health of the individual at its highest possible standard, through rational living, the rules of which have been so often pointed out in connection with the advice that has been given looking toward the prevention of influenza."

1249 new cases and 35 deaths were reported to the State Department of Health on January 10. Fitchburg reported 115 cases and no deaths, covering a period of 7 days. In Cambridge 77 cases were reported, but no deaths. Other figures include: Somerville, 377; Fall River, 37; Worcester, 37; Norwood, 36 (two days); Lowell, 35; New Bedford, 31; Lynn, 29; Walpole, 28; Avon, 26 (four days); Winthrop, 31; Greenfield, 10, and Bourne, 20.

The following deaths were reported: Boston, 25; Northampton, 6; Springfield, 1; Natick, 1, and New Bedford, 2.

On January 11, 232 new cases and 23 deaths were reported to the Health Department of Boston. The decrease in the number of deaths indicates a general improvement in the situation.

DAILY INSPECTION OF ELEVATED CARS.—Dr. William C. Woodward has announced recently that cars of the Elevated Railway will be examined daily by inspectors from the Health Department.

"Every inspector and nurse in the service of the Health Department will hereafter, as he or she travels on any elevated or surface car in the city of Boston on official business, note the sanitary condition of that car on the blank form that has been provided for that purpose, and will turn in that form, with appropriate recommendation, duly signed, to her or his supervising officer on the day following the day of inspection.

"Forms filled in by food inspectors will be turned in to the officer in charge of the particular branch of the food inspection service in which the inspector is employed, and reports turned in by nurses will be given to the deputy commissioner in charge of the medical division, and such forms will be transmitted by the supervising officers to the deputy commissioner in charge of the sanitary division, or his representative, for record and tabulation.

"A separate card will be used for each car inspected.

"The card should be filled in while on the car, or as soon after leaving it, as practicable. The card originally filled in should be turned in; it is not necessary to copy it. The three points to be noted are crowding, ventilation, cleanliness.

"Each of these will be scored on the basis of 100, according to the observer's best judgment. For instance, a car in which all seats are filled and in which not more than one-quarter as many passengers are standing as are seated may be given a rating of 100; while a car that is so crowded as to render its use in that condition entirely unjustifiable from a sanitary standpoint, however justifiable it may be from the standpoint of emergency, should be graded as 70, or below the passing mark, and it may be graded down to any figure whatsoever, in proportion to the overcrowded condition.

"The percentage grade given for crowding should be carried out in the column to the right, and the percentages for ventilation and cleanliness should be carried out in like manner. The notes and comments called for: 'Number of passengers standing,' 'Number of ventilators open,' 'Cleanliness of floors,' etc., need not be carried out into the column to the left, although where the answer cannot be stated in figures, as, for instance, the number of passengers standing, etc., the general condition may be expressed in a percentage basis, 100 being perfect.

"For instance, if the floors are perfectly clean, as measured by practical standards, they may be given 100, but if they are less clean they may be rated down to 90 or 80, or any other figure the observer deems proper.

"The deputy commissioner in charge of the sanitary division will issue such further instruction in regard to the carrying out of the details of this memorandum as may be necessary to procure uniformity of standards of judgment on the part of all inspectors and nurses, and prompt and complete returns from them.

"The deputy commissioner in charge of the sanitary division will see that all returns are promptly and properly tabulated and footings brought down from day to day; that responsible officers of either railway company are notified of anything requiring action on their part, and that such further action is taken from day to day as is indicated by the reports filed.

These projected measures will meet the cordial approval of the medical profession. Probably

public conveyances have been one of the chief agents in the wide dissemination of recent influenza epidemics.

Miscellany.

RECENT DECISIONS OF MASSACHUSETTS INDUSTRIAL ACCIDENT BOARD.

WORKMEN'S COMPENSATION ACT. INDUSTRIAL ACCIDENT BOARD. BOSTON, MASSACHUSETTS.

Joseph Ammendolia, employee.
Plymouth Rubber Company, employer.
American Mutual Liability Insurance Company, insurer.

FINDINGS AND DECISION OF THE INDUSTRIAL ACCIDENT BOARD UNDER PART III., SECTION 13.

THE above matter, the request of the insurer as to the reasonableness of the hospital bill for services rendered under Part II., Section 5, was heard by Mr. Kennard at Boston, Massachusetts, on Monday, June 24, 1918, at 10 A.M., and the evidence is reported herewith to the Industrial Accident Board for decision, as provided by Part III., Section 13, of the Act.

The employee received an injury on April 9, 1918, while employed by the Plymouth Rubber Company.

Dr. Charles R. Weld, representing the Massachusetts General Hospital, testified that he is one of the assistant superintendents of the hospital.

At this point, the doctor, having been asked to give the history of the case as disclosed from the records, counsel for insurer stated that the only question involved in this case was as to the amount per week charged by the hospital. The counsel stated that the position of the insurer was that they understood that the Industrial Accident Board had made a ruling, which, so far as they have been notified, has not been changed: that the maximum amount allowed for a hospital was to be \$15 per week, and for that reason they contend that in this case they should not pay \$17.50.

Dr. Weld stated that the claim of the hospital for \$17.50 per week was not made because of any peculiar features connected with this case, but because that was the charge which the hospital is making for all cases which come into their institution where the patients are able to pay, and that they believe that in industrial accident cases they should be allowed the same rate. The charge of \$17.50, now being collected by the Massachusetts General Hospital, has been in operation for about one year; prior to that time the charge was \$15 per week.

The ruling of the Board, referred to by coun-

sel for the insurer, was made at some time prior to the date when the change in rates went into effect at the Massachusetts General Hospital.

The Industrial Accident Board find and rule, upon all the evidence, that \$17.50 is a reasonable fee per week for the services rendered by the Massachusetts General Hospital in the above case. This is not a discriminatory rate, but is the standard rate charged by the hospital to all patients who are able to pay.

WORKMEN'S COMPENSATION ACT. INDUSTRIAL ACCIDENT BOARD, BOSTON, MASSACHUSETTS.

John Brady, employee.
Shoe City Express Company, employer.
U. S. Casualty Company, insurer.
Brockton Hospital, hospital.
Dr. Michael F. Barrett, physician.

FINDINGS AND DECISIONS OF THE INDUSTRIAL ACCIDENT BOARD IN RE MEDICAL BILLS.

The above matter, the request of the employee for the approval of medical bills incurred by him, on the ground that this is an unusual case within the meaning of Part II., Section 5, was heard by Mr. Gleason at Brockton, Massachusetts, on Tuesday, November 26, 1918, and the evidence reported to the full board for decision.

Appearances: George E. Mears, Esq., for the insurer. The doctor appeared personally. The Brockton Hospital was not represented.

John Brady, the employee, was in the employ of the Shoe City Express Company of Brockton, Mass. He was employed as a driver of a truck and an all round expressman. On January 21, 1918, while riding on the truck, the truck skidded, hitting a telegraph pole, as a result of which Mr. Brady's left leg was amputated. He was paid compensation by the insurer from the eleventh day after the injury up to November 18, compensation payments continuing. He was also paid specific compensation at the rate of \$10 a week for a period of fifty weeks on account of the loss of his left leg.

The bill of the Brockton Hospital follows:

Account of John Brady.

To the Brockton Hospital, Dr.

Board from Jan. 21, 1918, to May 25, 1918.	
2 wks., 4 days, at \$14.00 per wk.	\$36.00
15 wks., 1 day, at \$17.50 per wk.	265.00
Operating room	3.75
Total	\$304.75
Paid	130.00
Balance	\$174.75

Dr. Michael F. Barrett testified that this employee was injured by being caught between the seat of a truck and an electric light pole, as the result of which he had a traumatic amputation at a spot just below the knee. That was com-

bined with a great deal of crushing of the soft parts and as a result of that he had a good deal of suppuration and inflammation. He was taken to the hospital directly. He saw him before he went to the hospital and after he arrived there. He lost a great deal of blood and when he went to the hospital, he cleaned up the amputation. His general condition was pretty poor as a result of hemorrhage, but he was safe at all times; there was no question about his getting better. After a few days, the stitches pulled out and began to drain and that delayed him more than anything. He was obliged to perform a secondary operation. There was inflammation in the tissues which extended above the knee joint, but that eventually cleared up. He attended him from January 21 up to about six weeks ago. He gave him a bill for \$150, which included everything.

On cross examination, the doctor testified that he had no idea of how many visits he made to this man. He visited him continually from January 21 to May 24, and then he saw him at his office two or three times a week for the next two months. He did not keep any account of his visits, but gave the man a blanket bill of what he thought it was worth to him. His condition was not very good for longer than two weeks; he was slowly coming back all the time. His treatment consisted of dressings. He also treated the man constitutionally. The stitches gradually came out at the end of ten days and it was apparent that it was not going to heal. It was holding some, but the edges had pulled apart and it was draining quite a bit of pus. It granulated, leaving a piece of bone protruding at the lower end of the stump. He removed that end of the stump on May 3. It often proves that a bone will be too long and a secondary operation has to be performed. He had a very short stump and the purpose was to save some of the leg so he would have something below his knee joint. He wanted to save him a part of his leg so he could wear an artificial leg. When he performed the first operation, he anticipated that there might be a possibility of a subsequent operation. He thought he would probably have to have more bone taken out. He did save three or four inches of the tibia. This man suffered a terrific amount of shock with his injury. The injury which this man received was a very severe one.

In answer to questions by Mr. Gleason, the doctor testified that he was asked by Mr. Lyons, the manager of the Shoe City Express Company, to handle this case.

John Brady, the employee, testified that he was in the hospital from January 21 to May 25. His brother paid \$130 to the hospital. The total bill was \$304.75, leaving \$174.75 to be paid. The \$130 which was paid to the hospital was paid by his brother.

The doctor further testified that the last time he saw Mr. Brady's leg, he had a granulating

spot over the bone. He thinks he can wear an artificial limb at any time.

The following requests for rulings were submitted by the attorney for the insurer:

1. The facts in this case do not constitute an unusual cause within the meaning of Part II., Section 5, as amended, of the Workmen's Compensation Act, authorizing the Board within its discretion to order payments for medical and hospital services and medicines for a longer period than the first two weeks after the injury.

2. It is not in the ordinary case requiring longer medical attendance that the discretion of the Board may be exercised to charge this attendance to the expense of the insurer, but only in unusual cases.

3. Mere severity of an injury or length of treatment does not constitute an unusual case within the meaning of section 5 of Part II., of the Workmen's Compensation Act.

4. An unusual case within the meaning of the Workmen's Compensation Act is one that is not contemplated and cannot be foreseen in the ordinary course of surgical treatment.

Insurer's requests were passed upon as follows: No. 1 is refused. No. 2 is given. With regard to Nos. 3 and 4, the Board rules that this case, upon all the evidence, is unusual.

The only case in which the question as to the right of a physician to the payment of his bill for a longer period than two weeks was before the Supreme Judicial Court in this Commonwealth is *Huxen's Case*, 226 Mass. 292. In that case, the Court said: "It is not in an ordinary case requiring longer medical attendance that the discretion of the Board may be exercised to charge this attendance to the expense of the insurer. It is only in 'unusual cases' that they may do so. There would be grave doubt whether a case where the employee is able to go from his home in Cambridge to an office in Boston could be so unusual as to be within the purview of the Act."

The word "unusual" is defined as follows: "Of a character, number or size not usually met with; uncommon; infrequent; rare." (Standard Dictionary of the English Language, Funk & Wagnall.) "Not usual; uncommon; rare." (Webster's Dictionary.) "Not usual; not frequent; not common; rare; strange." (Century Dictionary.)

The evidence shows that this case is unusual; that it is a case out of the common run of cases in view of the nature of the injury and the complications following such injury. The usual case and the usual personal injury arising out of the employment are those cases and injuries which require ordinary medical treatment and care and go along uneventfully to their termination, and they may or may not require treatment for a longer period than two weeks. These cases are not within the discretion of the Board to allow further medical and hospital fees after the first two weeks. A case may be unusual, because the nature of the injury, its particular location, and

its extensiveness necessarily entail a prolonged disability; that is, longer than the usual. It may be unusual, because of any interruption of convalescence of such a nature as not to occur commonly in that particular class of cases and because it is likely, unless specially treated, to jeopardize the probability of a speedy recovery from a medical standpoint and the employee's early restoration to his position as a wage-earner. The employee's status with reference to his support of others is a factor which may be taken into consideration in determining whether a case is unusual. Under the usual classification will come so-called minor injuries, minor amputations, uncomplicated by sepsis, and all injuries of a minor type which do not require, as a result of such injuries or complications following them, the services of specialists, special nursing and hospital care. Under the unusual case classification may come, major injuries, compound fractures, injuries followed by sepsis, some major amputations and operations, serious pelvic and back injuries, and injuries requiring special apparatus or the services of specialists.

This was a very serious injury; the employee was in a critical condition; the stitches pulled out, and a secondary operation was necessary. The report of the injury shows that the employee had a dependent mother. It was a case that required hospital care and attention if the man was to recover at all, and particularly if he was to be restored once more to any degree of efficiency.

The bill of the hospital, as rendered, in amount three hundred four and seventy-five hundredths dollars (\$304.75) is approved for payment by the insurer, the employee to be reimbursed in the sum of one hundred thirty dollars (\$130), the amount paid the hospital by his brother, the sum to be paid the hospital to be reduced by this amount. The bill of the physician, in amount \$150, is a reasonable fee for the services rendered, and is approved for payment.

The following self-explanatory letter was recently issued by the Secretary of the Industrial Accident Board:

December 12, 1918.

To Hospitals and Insurers:

The following fees will be allowed by the Industrial Accident Board on and after this date:

1. To all hospitals, where it is shown that the rate charged for hospital care and treatment is not a discriminatory rate, a fee not to exceed \$17.50 for the first two weeks, and the same rate for the full period in such cases as may be deemed unusual cases within the meaning of Part II, s. 5, of the Act.

2. Operating room fee, \$5.

3. Hospital x-ray charges; small plates, \$3; large plates, \$5.

INDUSTRIAL ACCIDENT BOARD,

By ROBERT E. GRANDFIELD, *Secretary*.

Correspondence.

SCHOOL VENTILATION.*

Warwick, Mass., Dec. 28, 1918.

Mr. Editor:

To attempt to get air of the most desirable quality, in a necessary quantity and delivered in a manner acceptable to persons indoors, without the utmost co-operation with the natural laws, is fatuous. Air is more or less modified by its passage through shafts and in conduits so as to affect its character by the loss of fresh odors, the gathering of dust, etc., and so the matter of quality favors direct systems of ventilation. The tincture of air is obviously influenced by the surroundings of the school room; so in order to get air well garnished and cleansed by the free circulating currents and purified by the sun, there must be ample space about the building and regard for the kind of environment. Space with nature's trees and vegetation give a better flavor to the incoming air ordinarily than man's thoughtless congested workshops and artifices which hold and emit any old fumes. Whether or not the sense of smell is keen to the quality of air in a conscious way, odors have their psychical and physical effects. Teachers may complain that they find a boy near where the school room air has an outlet pale and anemic. Artificial heating systems, at best furnishing each person with the 20 cubic feet, may rush warmed air by such a boy so that he sits in the fouled draft of the room. Air sufficient in quantity, nominally fresh, may, after all, possess such a medley of odors as to be a contributing cause to adenoids or some other affections.

Six years ago experiments were made in Wisconsin which seemed directly to connect the season of "colds" with that of closed windows in the school-room. Within the past year, report has been made of tests conducted in New York, which would confirm in general those results. The writer has been struck by two forms of architecture which afford very direct ventilation and still can be adjusted to protect from undue draft and cold. The one already discussed at your "hearings" is in use at the hospital and in schools at Canton. It was observed that in the Indian tepee air comes in low down, is heated and goes out with the smoke at the apex high up. This, in effect, illustrates the direct system of ventilation followed out at Canton in modern buildings. The slant of the ceilings, the pitch of the roof is made to favor the natural drift of the heated and fouled air upward and out. Ordinary box-shaped rooms without windows on different sides, low studded as they are, and with an inadequate exit at the ceiling, make natural ventilation impossible. The attempts artificially to ventilate such shaped rooms must either fan or suction the air at a rate which makes unwholesome drafts, or else leave areas foul which taint the whole. By a careful study of high vaulted or arched churches, halls and theatres, one comes to appreciate the relationship between height and the pitch overhead to air circulation. Under galleries the air seems pocketed and one feels readily the difference between air there and that out directly under the roof. Now the Canton buildings, with windows on the different sides near the base and at the apex of the roof, not only allow for the natural upward drift of air, but by windward closing and leeward opening, allow also for control of the force of the current or draft.

The other form of architecture referred to has been found valuable to the modern poultryman and emphasizes certain fundamentals. In the main, the windows and openings are on the south side of the buildings. The areas of these afford plenty of sunlight and sun warmth. Cheese cloth windows and curtains can be adjusted so as to protect the poultry from the extreme cold without interfering with the air circula-

*This letter was sent by the author to the State Commission on School Ventilation.

tion. If such provisions of sunlight and ventilation are found necessary for the best care of poultry, surely these principles must be given the greatest consideration where they can be used to promote the life, wellbeing and mental efficiency of the human kind.

Experiments of the past ten years have modified scientific opinion as to some of the dangers from polluted air. A higher percentage of carbon dioxide may be taken into the lungs without serious effects, provided the air is in motion. The main deduction is that the sense of stuffiness and that stagnation of the atmosphere act unfavorably upon the process of respiration. These studies have not shown such marked results regarding the effects of low humidity and disagreeable odors, but undoubtedly their evils will soon be shown out as conspicuously as the dangers from stagnation and drafts. But it must be remembered that each individual has his own personal equation regarding humidity and odor and this, too, is a varying one.

The ideal ventilation is to secure a texture of air indoors more nearly resembling that of the untrammelled outdoors, including in effect variations in rate of movement and heat rhythm. The New England climate has conspicuous changes throughout the year, whereas that of California is more even. Geographical students argue in behalf of a better civilization where there is a moderate rainfall and somewhat pronounced atmospheric disturbances rather than where the climate is even and dry. The tests for physical and mental work and labor have proven that daily and seasonal changes of temperature are a necessary stimulus to efficiency. From this we should deduce the need during school hours of variations both in the rate of flow of air and its temperature. The wind outside seldom ceases and the temperature never remains stationary for any length of time. The collection of so many differing temperatures in one room and their confinement to seats for such periods does not of course allow for any pronounced ranges of temperature; but slight oscillations or waves, say between 60 and 70 degrees, should be provided for. We know the summer camp ministers somehow to rugged virtues and finer sensibilities. If outdoor life and treatment is so necessary for restoring vigor in the weak, its fundamental virtues must not be slighted or lost if the health of the strong is to be retained. To secure adequate ventilation, then, nature in all its nakedness and wildness must be courted.

PAUL W. GOLDSBURY, M.D.

TREATMENT OF INFLUENZA.

Stoneham, Mass., Jan. 3, 1919.

Mr. Editor:

I am a retired physician from Maine and never have been registered in Massachusetts, but I have five grown up children and their families who won't have anyone but me (unless in consultation) attend them.

One of my sons is peculiarly liable to pneumonia, having had hard runs five times prior to ten years ago. In the course of my studies and experiments in drugs, I came to the conclusion that pilocarpine muriate must prevent congestion of the lungs; and so, when he had his last attack of pneumonia, I was at his bedside constantly. Before I got to him, however, he had the disease well settled upon him, fever 103.5°, rusty sputum plentiful, pulse bounding, face flushed and wandering in mind. The front right lobe was one-third full, the breathing raucous and both lungs tender and full of râles. This was 6 p.m. I dared not neglect the ordinary remedies, but began to give pilocarpine at once, one-eighth grain, at first, and half that every two or three hours, or just enough to keep him cool and moist.

At noon the next day his fever and all other symptoms, except the congestion, had left him, and he wanted to get up. For seven days he had to stay

abed, much to his dissatisfaction, although he could not stand up, and his lung did not begin to clear up for a week. Well, he was six weeks convalescing before he could resume his duties.

Now ten years have passed and he has been threatened with pneumonia twice a year at least, but the pilocarpine, which he keeps on hand, has, so far, prevented its development.

Here is the point of this letter: About four weeks ago this son came home with the influenza and called me from my upstairs tenement in his house. He then had all the characteristics of the disease well developed: temperature 103.6°. Pains in every fibre and lungs in an irritated condition. I began symptomatic treatment but did not, you may be sure, forget the pilocarpine for his lungs. Within 24 hours I found that the pilocarpine was getting the best of the disease itself and the temperature never came back, but he was unable to sit up for ten days and unable to go to his business for three weeks and is not now as strong as before.

When he had been abed three days, his wife, his eldest boy, my daughter and myself all came down with it in the same way, with temperature from 102.6° to 104°. I began administration of the pilocarpine only, at the first moment and saved all of us from high fever and great distress although it was three weeks or over before we began to feel normal.

A lady who lived across the street and had six children, called me in, as I was passing, and told me her husband had the influenza and asked me to give him the stuff I had given to my folks. I demurred because I am not entitled to practice in this State, but I examined him and gave them some tablets of pilocarpine left in a tube in my pocket, with directions how to use them. The next day his temperature (103.4°) dropped to 99° and never thereafter rose above that, and, in spite of me, he went to work in a week. I am fearing a relapse.

While I was sitting there they called my attention to their eldest daughter, lying on a couch. I found her temperature 104.6° and other things in proportion. On examination of her lungs, I found both very sore, with characteristic broncho-pneumonia symptoms, the right lung already having patches of hardened spots.

I ordered the same treatment for her, only a trifle stronger at first, and in 48 hours her influenza symptoms were gone except the lameness and weakness. In four days she wanted to get up, but could not stand upright. I told her mother to keep her in bed at least ten days and look to it that the fever did not come back, but not to press the pilocarpine beyond the point of natural moisture. This was a week ago, and she feels well now, or thinks she does, but is, I believe, still in bed. Another child has come down and they are treating her in the same way with like results, I understand, although I have not been over. Of course the depressing effect of the pilocarpine must be kept in mind.

I think that these results, stumbled upon by accident while trying to protect my son's weak lungs, ought to be known to the profession and that is why I write you this letter.

Yours very truly,

FRED H. GILE, M.D.,
Retired 20 years.

SOCIETY NOTICE.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY.—A special meeting of the Society will be held at the Boston Medical Library on Wednesday, January 29, 1919, at 12 o'clock, noon.

Business: To see what action the Society will take toward the deficit in the treasury. Report of the Auxiliary Medical Defense Committee.

Dr. Walter E. Fernald will speak on "Practical Mental Hygiene."

Lunch will be served at 1.15 p.m.

CHARLES W. ADAMS, Secretary.

The Boston Medical and Surgical Journal

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Original Articles.

ANTHRAX SEPTICEMIA FROM ACCIDENTAL INOCULATION OF SHAVING WOUND.

By ROBERT W. ANGEVINE, M.D., ROCHESTER, N. Y.,

First Lieutenant, M. C., U. S. Army.

[From the Surgical Service of the Rochester General Hospital.]

AN instance of anthrax bacteremia with fatal termination apparently caused by accidental inoculation from an infected shaving brush, or possibly from a woolen blanket containing the anthrax spores, was recently observed in the surgical ward of the hospital. The virulence of the organism present is attested by the fact that death ensued four days after the date of infection and that pathological findings showed the presence of a general septicemia, allowing the identification and culture of the organism from blood and spinal fluid.

The United States Public Health Report¹ discusses recently reported cases of anthrax infection, and states that malignant pustule following accidental cutting of the face or neck while shaving has been noted increasingly often of late, and sufficiently so to indicate the possibility of a widespread distribution of infected shaving brushes. Back of this, the increasing

incidence of this form of the disease indicates a letting down of the bars previously placed against raw materials from certain regions used in making brushes and material heretofore rejected because of the frequency of the development of anthrax after their use. Now, possibly on account of war stringency, this material appears to have come into use in the making of the cheaper brushes. Recently three similar cases were reported at Camp Hancock, Georgia.²

A robust male of 24 years and of American birth entered the hospital at 6.45 o'clock one evening, having been referred to the house for treatment of an infection showing quite inconspicuously on the left cheek. The patient had not been engaged in any of the so-called dangerous trades, but had been a student of engineering. He told the story of having shaved that morning and of having accidentally cut himself. A new brush had been used. The patient paid no particular attention to the slight wound during the day, but redness and swelling gradually developed, and the patient presented himself for treatment that evening, a rather pronounced temperature having developed.

On the evening of entrance a small incised wound about one centimeter in length was described as having been present in the skin of the cheek about one-half inch above the jaw and

about half way between the angle of the jaw and the point of the chin. A lesion, papular in form, had developed at a point along this incision and was surrounded by an areola of swelling. That night the entire left cheek was somewhat swollen, the enlargement reaching from the outer canthus of the left eye to the line of the jaw. Warmth was evident, but induration was slight or absent. The area was tender to palpation. Pulse, temperature and respirations were recorded as 88, 102.2, and 20. Ice was applied to the cheek.

The following day the lesion appeared as a small, brownish maculo-papule somewhat less than a centimeter in diameter. The lesion became vesicular, the thin wall retaining blood-stained fluid. Induration was more definite than on the previous day; tenderness was acute but pain was not a symptom. The patient was prostrated and nausea and vomiting were twice noted in the records. On the third day of the clinical course the lesion was noted as having broken down and presented a depressed crater-like center. In the depressed area was a newly-formed unorganized crust, surrounding a definite black eschar. About the carbon-like material was a ring of tissue of a bluish tinge. About this was a zone of redness, swelling and definite induration. Oedematous tissue extended for eight or nine centimeters in each direction about the central focus.

The patient complained of "aching all over the body," but not of pain in face. Flaxseed poultices were applied to the area of swelling and morphine was administered to combat restlessness and induce sleep. There was vomiting during the night and, on waking, the patient complained of intense headache. Pulse, temperature and respirations were taken as 96, 103.2 and 26, respectively.

On the fourth day the lesion showed a large area of eschar; the swelling and induration and surrounding oedema were more marked and the enlargement of adjacent lymph-glands was very evident. The pulse was 110, temperature, 104.5, and respirations 40. The swelling had extended so that the left eye was entirely closed and face and neck were oedematous. Palpation of the cheek showed that the induration involved the entire thickness of the soft tissues. The patient was able to open his mouth just enough to admit the tip of the finger. The temperature rose to 105, sweating was profuse and chills frequent. During the afternoon the patient showed

signs of irritation of the base of the brain and lapsed into unconsciousness. These symptoms increased in intensity, orthotonus developed and the patient died at 7.45 that evening.

A white count taken on the day after entrance gave a leucocytosis of 31,600 per cu. mm. The differential showed: Polymorphonuclear leucocytes, 82%; lymphocytes, 14%; mononuclear leucocytes, 2%; transitional cells, 2%.

The urine was negative. Culture from the cheek lesion taken on the second day gave a small diplococcus, a large diplococcus, a short diplobacillus and *b. anthracis*. Blood culture was positive for the organism on the third day. Lumbar puncture taken that day showed the presence, morphologically, of anthrax organisms in large numbers. Samples of the blood injected into the lymph sac of a rabbit proved fatal in 36 hours, whereas it was pathogenic for the guinea-pig in 24 hours. Examination of the rabbit and guinea-pig after death showed a purulent exudate in the peritoneal cavity, and the presence of the specific bacillus. The organism from beneath the gangrenous eschar was smeared and found to be gram-positive, occurred in short chains and average size was given as 1 by 6 microns. No spores were noted in the smears. The cultures from the blood gave typical appearances morphologically, and culturally the growth gave the Medusa-head appearance on agar. Spores were noted in the culture.

REFERENCES.

- ¹ United States Public Health Report, June 12, 1918.
- ² Jour. A. M. A., Oct. 5, 1918, p. 1133.

SOME NOTES ON OUR EXPERIENCE DURING THE PRESENT "SPANISH" INFLUENZA EPIDEMIC.

By PHILIPPE SAINTE-MARIE, M.D., SOREL, P. Q., CANADA.

OUR experience covers 800 cases, a great part of these being attended to as chief internist of a large emergency hospital of Montreal, Canada. In nearly all we found mouth acidity and inflammation of some kind of the gums, alveoli or teeth (at roots). The majority of patients were affected with a confirmed pyorrhea. Impairment of mastication and a complete lack of salivation were the characteristic digestive symptoms noted.

This fact opens the light on that very simple rule of physiology: digestion of amylaceous

substances is mostly done by the juices of the mouth glands, saliva. We believe that the proper diet must be dependent upon the proper salivation, and that not enough care is taken in making people notice the importance of this function at the right point of digestive equilibrium.

In most cases, the coloration of the throat gave the note of the prognosis. It ran from the red violet to the rose in mild cases. The cure generally corresponded to the rose color. The persistence of the dark red coloration of the first three days usually meant a severe case of disagreeable symptoms and thoracic complications.

A wash for the month, teeth or nose composed of thymol solution (saturated) mixed with one to three, four, five, or six parts of water gave good results if used with caution. The most effective curative and preventive that we used was camphorated oil taken internally, whether by mouth, by nose, on sugar, or in capsules, in doses varying from 7 to 180 drops intramuscularly. The mouth wash and the camphorated oil, used conjointly in five-drop doses and taken at four-hour intervals during the epidemic, prevented many from having influenza. Antiseptic treatment of the bowels was another measure practised successfully.

Two cases of meningitis, together with pneumonia complications, unconsciousness, acidosis, and a degree of sensibility irritating quiescent nerves, were relieved by injection into the spinal canal of a solution of spirits of camphor diluted *secundum artem* to $\frac{1}{20}$ of camphor and $\frac{1}{2}$ strength of alcohol. These two cases were cured after 20 days' care at the hospital.

The 10 c.c. intramuscular injection of camphorated oil saved many who became cyanosed with temperature 104°F. , pulse 110 to 130, unconscious, and dying. The injections, repeated every six to eight hours, according to indications, and sometimes varying in strength proved very efficacious.

We learned that the pneumococcus was influenced by the gum camphor, and having used it successfully in our previous experience, we did not hesitate to employ it and did so with success. The use of camphor to sustain and increase resistance against influenza was not surpassed in effectiveness even by strychnine, which we also gave judiciously.

The epidemic taught us the importance of salivation, as none of the patients put on a diet

without any amylaceous substances and fats during the fever period developed complications after they entered the hospital. We had no intestinal troubles. The patients continuing to take care of their teeth and of their salivation cured themselves permanently of what they called "old dyspepsia."

The best anti-acids employed were magnesium oxide, bicarbonate of soda, and bacillus bulgaricus tablets. We had no nephritis complications, either actual or consensive.

AN INTERESTING UROLOGICAL CASE.

By N. FINKELSTEIN, M.D., PITTSFIELD, MASS.

A MAN, aged 32, of Russian birth, travelling salesman, consulted me July 5, 1917, about an attack of sharp colicky pain in his left loin which had lasted about five hours. He gave a history of two similar attacks during the past three years, each one lasting about two hours, relieved by morphine. He also complained of the following symptoms, which began about eight months ago—headache, dizziness, nausea, constipation, flatulence, frequency of urination without burning or pain. His venereal history consists of a gonorrheal infection four years ago which cleared up in five weeks.

Physical examination.—Patient appeared to be in great pain, temperature, 99° ; pulse, 90° ; respiration, 22; blood pressure, systolic, 120; diastolic, 80; pupils equal and react, tongue coated, teeth in good condition, throat normal, heart and lungs negative. Abdomen—marked tenderness on left side with some spasm of left rectus, marked tenderness in left costo-vertebral angle, kidneys not palpable. Urine very turbid, acid, spec. grav., 1020; albumen, a trace; no sugar, no acetone; sediment shows a great deal of pus, many red blood cells, no casts. Cystoscopic examination—trigone congested and edematous, right ureteral orifice normal, left orifice dilated with plug of pus projecting; vesical mucous membrane shows moderate degree of cystitis. Left ureter catheterized, plug of pus dislodged, gush of bloody urine followed withdrawal of catheter with complete relief to the patient. Catheter again passed into left ureter, pelvis entered without any difficulty and obtained urine containing blood and pus; wax tipped catheter negative for stone.



FIG. 1.



FIG. 2.



FIG. 3.

I cystoscoped him three days later, catheterized both ureters and obtained normal urine from the left side, turbid urine from the right side. Phthalein intravenously returned in four minutes from left side, six minutes from right; total output at end of 45 minutes, left side, 35%; right, 20%;

Patient returned December 15, 1917, still

complaining of same symptoms, no further attacks of pain in left side. Cystoscopic examination—normal urine obtained from left kidney, purulent from right; phthalein test same as before. Radiograph of both sides of urinary tract—large branching shadow in region of right kidney (Fig. 2), left side, negative. Diagnosis—large branching calculus of right kidney with pyelo-nephritis.

Operation, January 5, 1918.—Oblique lumbar incision; kidney delivered; somewhat enlarged; filled with stone. Owing to the enormous size of the stone I removed kidney. The accompanying photograph (Fig. 1) shows the kidney and stone *in situ*, also dilated calyces filled with gravel and small stones. Patient made an uneventful recovery, left hospital in 15 days. With the exception of a little dizziness he was well until July 18, 1918.

On this date, at 6 A.M., patient was seized with violent attack of pain in left loin, which lasted about twelve hours, accompanied by per-

sistent vomiting and hiccough. Complete anuria for the next thirty-six hours. Catheterization of ureter showed complete obstruction at uretero-pelvic junction. Patient growing gradually worse, semi-comatose, pulse rapid bounding and irregular. Diagnosis—Calculus anuria.

Operation July 19.—Oblique lumbar incision; kidney delivered; found to be more than twice normal size; greatly engorged; pelvis small and empty. Stone impacted at the uretero-pelvic junction was pushed up into the pelvis. Pelvis opened and a stone the size of a large bean (Fig. 3) removed. Kidney decapsulated and cortex incised in three different places to relieve pressure. Kidney replaced, pelvis left open with drainage down to it. Patient voided nine pints of urine the first twenty-four hours after the operation. Drainage removed at the end of the fourth day; no leakage of urine after the sixth day. Recovery uneventful and patient left hospital in sixteen days. Still complained of a little dizziness when last seen, December 15, 1918; otherwise well.

Selected Papers.

AN OPERATION FOR BONY OCCLUSION OF THE POSTERIOR NARES.*

BY LEON E. WHITE, M.D., BOSTON.

THE bane of operations for bony occlusions of the posterior nares has been the difficulty of obtaining a permanent opening. The cases are so rare that the operator sees only one or two in a lifetime so that he has small opportunity for observing the results of the different methods of operative procedure. Bony atresia of the posterior nares has been recognized for nearly a century, Otto in 1830 being the first to describe this condition, although he had observed it only in a human foetus. The first actual case in the living was reported by Emmert in 1851.

In 1886 Hubbell gave a brief résumé of the cases reported in medical literature, together with one of his own. These numbered seventeen and had been operated upon by various

methods, the results being by no means satisfactory. Hubbell's case was one of congenital bilateral atresia which he operated upon by a half-inch hand drill. Good sized openings were made but these closed so that a secondary was necessary, after which tubes of blocked tin 10 millimeters in diameter and 5 centimeters long were inserted and worn for six weeks. The final result was good.

Clark in 1898 reviewed the cases reported, twenty in all, and added one of his own. His patient, an undersized girl of eighteen, had an occlusion 9 millimeters thick near the septum and but 2 where it joined the outer nasal wall, this being the reverse of what is usually found. An opening 11 x 13 millimeters was made by an electric trephine. The relief was permanent as the patient was seen by Dr. Clark some ten or twelve years after the operation.

In 1904 Schwegelow gathered from the entire medical literature sixty-one cases of atresia, most of them osseous. Fraser in 1910 gives the number as 108, while Pfingst in 1914 reported the number as considerably over 100. He had a case of bilateral bony occlusion where the operation was done under local anesthesia. A button of bone $\frac{3}{8}$ of an inch in diameter and 1-16 of an inch thick was removed from one side by a hand trephine. The operation was so painful that the patient refused to have the other side touched, and when she was examined eight years later only a very small opening was found.

Pfingst is the only writer, with the exception of Katz, I have found who refers to the removal of the posterior end of the septum as the advisable procedure. His interpretation of the Katz method is as follows:—

"Under local anesthesia three or four holes are drilled with the electric drill and these connected by saw or punch. When the obstruction is anterior to the posterior edge of the vomer, the free or posterior end is removed thereby creating a larger opening."

A glance through the standard American text books from 1893 to 1917 reveals a rather scanty source of information, but interesting inasmuch as it shows a growing comprehension of the subject.

In Burnett's System, published in 1893, Seiler says that:

* Presented as a Candidate's Thesis for membership in The American Laryngological, Rhinological and Otolological Society, and read at Atlantic City, May 30, 1918. Reprinted from the *Laryngoscope*, August, 1918.

"Congenital synechia in the shape of a bony bridge across the posterior nares is sometimes met with but is of exceedingly rare occurrence."

In 1899 Roe (DeSchweinitz & Randall) says that bony occlusions of the posterior nares

"Should be removed with either a drill or bone cutting forceps. Great care must be exercised for the position of the bony formation frequently renders the operation extremely hazardous."

Shurly, in the 1900 edition, writes that:

"Posterior atresia, if bony, is best relieved by the use of a very narrow chisel, or, in favorable cases, the drill, followed by the insertion of plugs to keep the surfaces apart."

Cradle in 1902, in speaking of this operation, says:—

"Operations on bony plates closing the choana are more difficult (than the membranous ones). They are painful and bloody. The posterior wall of the pharynx must be guarded by the surgeon's fingers or still better by a suitable bent plate introduced through the mouth. The diaphragm can be pierced by a stilet and the opening enlarged by the saw or chisel. It is much better to make a large opening at once than to attempt to enlarge it subsequently by any mechanical means. Sometimes a tube must be worn for weeks. Among the recorded operations, some of them of recent date, there have been various accidents, such as middle ear infection and even an occasional death."

In Bosworth Edition of 1893 and in Kyle 1899, I was unable to find any reference to this condition, which was also true of Coakley 1901, of Ballinger 1908, and Wright and Smith 1914.

Loeb, 1917, says that:

"Bony occlusion of the posterior nares, unilateral or bilateral, may be relieved by removing the bony mass by means of chisels or burrs driven by a dental engine. After the opening is made, it may be enlarged by cutting forceps. Some operators remove the bony occlusion through a submucous resection but there is no advantage in this procedure and the difficulties of the operation are greatly increased."

This submucous resection method, however, is given the preference by most of the later writers. Thus, Richardson, who has given us a masterpiece on this subject, says that the method suggested by Uffenorde seems ideal.

"In this operation the muco-periosteum is raised on the septum down to the obstructing plate, from the anterior surface of which it is gradually separated until its outer border of

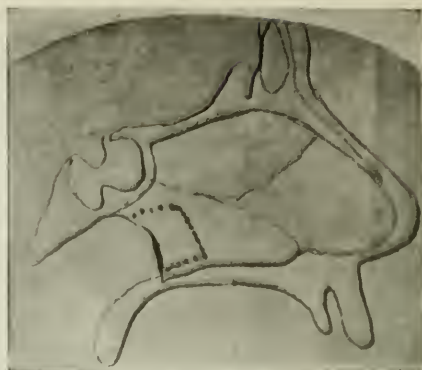


FIG. 1.—Diagrammatic view of nasal septum. The dotted lines indicate the approximate amount of septum to be removed.

attachment is reached. The flap is then thrown well outward and the bone plate is removed by chisels and coneotomes. After the bone partition is thoroughly removed, the flap is replaced and an incision is made vertically through the middle of the muco-periosteal flap which covers the nasal surface of the obstructing plate. Expanding forceps are now introduced and the redundant muco-periosteal flap is made to coapt and cover the whole margin of the bone wound."

As to the frequency of postnasal atresia, while comparatively few cases have been reported (probably not over 150), it is probable that there are many cases in the newborn which are never recognized, the victim passing away in the first few moments of its existence.

Richardson has reported a most instructive case of atresia in an infant, and he well says that:

"Many cases of this kind of deformity have been in the past, and even at the present time are, unrecognized at birth as such, and when speedily dying, as a result of the obstruction to respiration, are placed under the general class of asphyxia neonatorum."

This same thought had been emphasized by Dr. Clark, who says:

"This condition is one of such rarity, judging from the literature on the subject, that it at first seems of little practical interest to the physician; and yet there is no doubt that infants may die from the want of knowledge on the part of the family doctor of the possibility of the existence of such an abnormality. . . . Many infants must have died from this condition in whom it was never recognized. And when one considers the serious handicap that such a condition must be to the infant in its

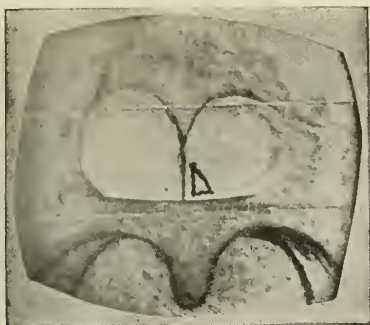


FIG. 2.—Diagrammatic view of posterior nares showing bony obstructions. The triangle indicates first portion to be removed.

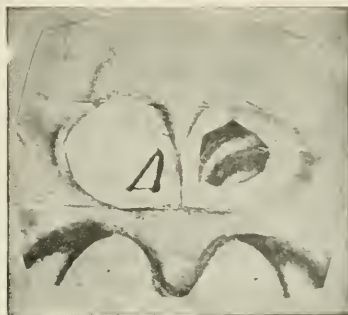


FIG. 3.—Diagrammatic view of removal of one of the bony obstructions, and the first step toward removal of the other.

struggle for existence, I think the greater wonder must be that any such cases have lived to grow up."

Attal also says that when both choanae are involved, the newborn succumb either by asphyxiation or debility due to obstructed breathing and difficulty in nursing. He advises immediate intervention and recommends a gouge and mallet and the use of rubber tubing to keep the passages open.

Koch reported the case of an infant of eleven months, who had purulent rhinitis involving the accessory sinuses so that it was most urgent that nasal respiration and drainage should be established. The osseous obstruction was removed, first on one side, then three weeks later on the other. There was complete cure in six weeks with great improvement in the general health.

Goez likewise operated on an infant for double bony atresia. The bone was thin and a trephine was used. A secondary operation was necessary and celluloid bougies were used once a week.

Heredity does not seem to be an important factor in this type of deformity. Some writers mention that other members of the family had nasal obstruction, but do not see the cases so as to make a definite diagnosis. Lang, however, cites several cases of choanal atresia extending through three generations of the same family, but Richardson takes him to task for his deductions, saying that "Lang attempts to prove the hereditary nature of this disturbance without any facts to substantiate his contention." "Lang saw," he says, "several cases in the one family, and even went so far as to include a deceased child whom he had never seen and

from this occurrence deduced the hereditary nature of the deformity."

As to the pathogenesis of congenital atresia various theories have been advanced. Lushka and Schwendt believe the condition is due to a proliferation upward and backward of the horizontal plate of the palate bone. Kahler and Kundrat regard it as due to an overgrowth and extension inward of the vertical plates of the palate bone and mention the fact that the lateral part of the oclusion is usually thicker than the median. This condition was marked in my first case but not in the second. Hopmann thinks that originally there existed a high degree of choanal stenosis which, with extreme deviation of the vomer and approximation of the internal pterygoid process of the sphenoid, eventuates in complete occlusion. Bitot differs from all these and claims the obstruction is an independent bone as indicated by its sutures.

That the condition might be due to some embryonal activity or the reverse has been



FIG. 4.—Diagrammatic view of results of completed operation after removal of the bony obstructions and the posterior end of septum.

likewise discussed, and the usual different theories advanced. The most plausible explanation is that given by Hochstetter, Tiemann, and Keibel who maintain that the primitive nasal cavities are from the first separated from the mouth and pharynx and form a blind cul-de-sac. The floor of these primitive nasal cavities is formed by the union of the lateral with the mesial nasal process, and is made more solid by the proliferation of the mesoderm between the two epithelial layers. The posterior part, however, continues as an epithelial layer and, as the nasal cavities elongate, ultimately reaches the naso-buccal membrane which finally gives way. In cases of atresia it is possible that the naso-buccal membrane becomes permeated by mesoderm and therefore fails to break down.

Choanal atresias have been divided into two classes:—

1. Those where the posterior end of the vomer extends beyond the atresia. These have been called by Schwendt the typical cases; and

2. Those where the obstruction is on the same plane as the posterior end of the vomer or the atypical, under which heading both of my cases are classed.

The following is Hochheim's report of the histological examination of a specimen of bony atresia:—

"In structure (the bone) corresponded to the hard palate. It consisted as the hard palate of the centrally placed plate of bone, which on the one surface was lined with muco-periosteum corresponding to the nasal cavity, and on the other of the muco-periosteum corresponding to the postnasal cavity modified in the respect that in this are found mucous glands, and the epithelia are columnar instead of the flat epithelia."

Two specimens of choanal atresia have been obtained and studied by Hamilton and Fraser. Hamilton's specimen came from a patient who died of pulmonary tuberculosis. "After maceration it presented," says Hamilton, "the following appearance:—

"The bony septum is quite straight. . . . Both choanae are occluded by bony plates, in each case diaphanous in the central part, their attachments being: the anterior, as far forward as the junction of the superior maxillar and the palate bones; their lateral, on the outer side, to the internal wings of the pterygoids; on the inner, to the posterior margins of the vomer, and their superior and posterior, to the basilar process of the occipital bone; the septum projects at its base behind the plane of the plates,

which latter, it will be thus seen, instead of being perpendicular, pass from above and behind downwards, forwards, almost approaching the horizontal."

Fraser's specimen came from a case of unilateral atresia that died from leptomenigitis from an old o.m.s.ch. He discussed his findings as they coincided or differed from the various theories advanced to explain this abnormality. As his case showed marked asymmetry of the hard palate, he cites the two theories advanced to explain the effect of mouth breathing on the shape of the palate.

"Siebenmann, Frankel, Grossheintz, Hagg, and Buser take the view that a high palate is only part of a congenitally high and narrow formation of the facial skeleton," while "Bloch, Körner, Waldow, Alkan, and Bentzen are of the opinion that mouth breathing produces an abnormally high palate on account of the pressure of the stretched cheeks on the lateral part of the alveolar arch, and also because of the want of counter pressure of the tongue on the roof of the mouth."

After a failure in my first operation, which I felt I had done thoroughly, following Uffenorde's method as nearly as possible, it occurred to me that if the raw surfaces were farther apart, the danger of closure would be greatly lessened: and remembering, also, that perforations in the septum usually stay open, it seemed to me that the logical thing to do would be to make a perforation in the posterior end of the septum involving the obstructing choana.

As far as I have been able to find by searching the literature, no cases have been reported where this method was followed. I thought the idea was original but find that Katz speaks of it as follows:—

"Lateralwärts gelangt man dabei nicht soweit infolge der räumlichen Behinderung durch die vorliegenden Teile, besonders durch die Muscheln; dagegen wurde medialwärts im grossen Umfange reseziert und vor allem vom hinteren Vomerende alles Erreichbare entfernt."

"Wer eine hinreichend grosse Öffnung angelegt und vor allem den hinteren Vomerend ausgiebig reseziert hat, für den wird sich die Nachbehandlung relativ einfach gestalten."

The posterior nares are formed by the vomer and nasal crest of the palate bone internally, the sphenoids above, the horizontal plate of the palate below and the pterygoid processes externally.

A fairly generous section is outlined for removal, as it seems better to err here on the side of too great rather than too small an amount. For the operation I have used both local and general anesthesia, but prefer the latter, especially where there is double occlusion. Ether, I feel, should be given a decided preference over chloroform, especially when the operation is done in the upright position. There is an element of danger, and Loeb, who has reported a death from chloroform, advises that "wherever possible, local anesthesia should be employed, as these patients, like others suffering from congenital malformations, do not bear general anesthesia well." Deflection of the septum or hypertrophy of the turbinates should of course be corrected before attacking the atresia, as it is essential to have the best possible operative field. It is hard to see through these noses which are usually small and narrow. After the free use of adrenalin to obtain a bloodless field, the obstructing bony plate can be readily perforated, with a long flat chisel held close to the septum. A triangular section, as outlined, is first removed, the forefinger being placed in the posterior nares to guard against accident. The bone is next punched out as thoroughly as possible and the rough edges smoothed off with a mastoid curet. When the atresia is bilateral the other side is operated on in the same way. The posterior end of the septum is then removed by rongeurs or curet, and after being smoothed off carefully, for it is quite brittle, it is covered by the mucosa which has been previously cut and elevated so as to leave enough for this purpose. All shreds should be carefully removed and the nose wiped clean. Each nostril is then packed with a strip of gauze covered with Cargile membrane or rubber tissue. The packing should be removed in 24 hours, and the subsequent treatment is only such as needed to keep the nose clean and free from crusts. If the operation has been done thoroughly, no further packing is necessary, nor will there be need for the wearing of any of the many devices recommended to keep the opening patent.

I beg to report the two following cases:—

CASE 1. Mr. H.—, 50 years of age, a newspaper editor from Prince Edward Island, was referred to me by Dr. Leary of Boston on November 7, 1913. He gave a history of having had obstruction in the right side of his nose as

long as he could remember, and of having been examined by many doctors at home, all of whom told him the obstruction could not be removed without endangering his life.

Upon examination I found the right side filled with a large quantity of offensive tenacious mucus. This was constantly drooling from the nose, and while he made continuous use of his handkerchief, he presented a pathetic spectacle. There was a marked deflection of the septum to the obstructed side, and a polyoid degeneration of practically the entire mucosa. The naso-pharyngoscope and rhinoscopic mirror showed complete occlusion of the right choana, the obstruction being on a plane with the posterior end of the septum. There was slight asymmetry of the face and a rather high hard palate; the eminence of the right eustachian tube seemed much nearer the median line than the left, a condition I later noted on digital examination when the patient was under ether. This malposition of the tube has not been noted, so far as I have been able to discover, and may have considerable bearing on the etiology. In order to reach the obstruction it was necessary to resect the anterior half of the septum, and to remove considerable of the degenerated mucous membrane. Under ether an attempt was next made to remove the bony wall across the choana in accordance with the method described by Uffenorde. After elevating the mucosa over the posterior portion of the septum and bony plate and pushing it as far over as possible, an opening was made with a long chisel through the bony atresia close to the septum and a considerable area punched out with a sphenoidal punch. The bone near the septum was thin and easily removed, but outwardly it became very thick and was extremely difficult to get out. An opening about 10 millimeters in diameter was eventually obtained. The mucous membrane was then put back into place and a vertical incision made through the central portion of the section originally covering the obstruction. This was packed tightly against the edges of the bone with iodoform tape. The wound healed well and the patient went home three weeks after the operation. Three months later he returned and I found that the opening had almost entirely closed, so that a second operation was necessary. This was done under local anesthesia. The operation was performed practically

as outlined in my description. An area about the size of a dime was removed from the posterior portion of the septum and the nose lightly packed with a 5-inch strip of tape surrounded with Cargile membrane. This was removed in 24 hours, the nose was cleansed daily for ten days, when the patient went home. Eight months later he returned and I was pleased to find that he had a good sized opening through which he was not only able to breathe, but what to him was of far greater importance, to blow the nose. There was no accumulation of mucus, a normal looking mucosa and an improvement in the senses of both smell and taste.

On April 18, 1917, more than three years after the final operation, he wrote me as follows:

"With reference to the good work you performed on me, it is a perfect job. The right nostril (the operated one) is still better than the left and gives me no trouble. The opening in the back wall is free and clear."

CASE 2. MISS H. E.—, age 18, of Lee, Maine, was referred to me by Dr. Way of Lincoln, Maine. She was admitted as a house case at the Massachusetts Charitable Eye and Ear Infirmary on March 31, 1916.

She gave the following verbatim history:—

"I am nearly 18 years old and I have never been able to breathe through my nose, nor to smell anything at all. I have, from birth, a bony growth in my nose which completely closes that passage between my nose and throat. When I was a few months old my mother took me to Bangor, Maine, and had my nose examined by two different nose and throat specialists but they could not do anything for me. Last summer I went to the Maine General Hospital and all the doctors in the hospital examined my nose and throat. They said that they had never seen a case like mine before and that there was no one in the State of Maine that could perform the operation successfully."

The patient was well developed and seemed rugged; had no sense of smell and taste was poor. The face was symmetrical and although a mouth-breather, the hard palate was not high. The hearing had always been good and both drum membranes were normal. While there was some lack of resonance in her voice, she was able to enunciate plainly; the nose was rather narrow; the septum in the median line and thick at base; the mucous membrane was fairly normal and there was but little excess

of secretion, thus differing markedly from the first case. The choanal obstruction could be seen both anteriorly and posteriorly. The vault could be made out and was normal. The eustachian eminences were in their usual position and not unduly prominent as in Case 1. The choanal obstructions appeared as rounding protrusions covered with normal mucous membrane. They seemed to be attached to the posterior end of the septum and not anterior to it.

The operation was performed by me on April 1st, the patient being under ether about 40 minutes. The following report was copied from the Massachusetts Charitable Eye and Ear Infirmary records:—

"The bony partitions occluding the posterior nares were removed by chisel and biting forceps, part of the posterior portion of the bony septum was also removed thus throwing the posterior nares into one cavity."

A rubber tube was placed in each nostril and a postnasal plug inserted. These were removed in 24 hours and no further packing used. The patient was discharged April 25th, practically well. The subsequent history of the case can best be told in her own words, written seven months later in response to my inquiry:—

"My nose and throat were sore for a short time after I left the hospital, but when my throat was healed so that I could eat anything that I wished I found that food tasted much better. I can now smell as well as any one, and I can breathe freely through both nostrils. The shape of my nose was changed: it used to be rather soft and shapeless but now it has a much better shape. My lips do not stick out as they used to, and my lower jaw is not dropped down as it was once. I think my memory is better and I enjoyed my walk, to and from school, as I never had enjoyed it before, because I could smell the fragrant spring flowers."

From the foregoing letter it is evident that the senses of taste and smell have been greatly improved and that a considerable change has taken place in her facial expression, as some writers, especially Schrötter, have mentioned. On October 16, 1917, her physician wrote as follows:—

"Miss H. E.—is breathing through her nose and the operation was entirely successful."

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fighting line the casualties in killed and wounded must necessarily be great. With 5,000,000 men taken out of civil life the reduction in death rate will be tremendous. Because of these dangers the President of the United States has pointed out that the conservation of the lives of our children is an essential war measure. We have also experienced a rapid decline in rate of increase in population by the cutting off of immigration, from which source we acquired an increase in 1913 and 1914 respectively of 1,197,892 and 1,218,408. Every warring nation at the end of the first year of war discovered that their neglect of the problem of the civil population meant an enormous increase in infant mortality. It became necessary for government health agencies to maintain the health of children as never before. The response in England was immediate and the infant mortality in 1916 attained the lowest point known in the history of England. Every avenue of education available has been applied to the needs of the various countries, and no period of life has been neglected. Pennsylvania was the first state to include child welfare as a factor in its war program, establishing a Division of Child Welfare in its Committee of Public Safety. There was no country-wide provision for the welfare of the children of the nation until the organization of the Woman's Committee of the Council of National Defense. This committee established a Division of Child Welfare and entered into co-operation with the Children's Bureau, to act as the agent of the Bureau in the organization and direction of child welfare in the various states through the medium of the state divisions of the Woman's Committee. To meet with a full measure of success child welfare work must have the active support of the medical profession. It is given to each of us to sacrifice much that those for whom our heroes die in France may be kept in health through childhood and youth to take their places in the work of the world in the years to come. The fight for the children against ignorance, poverty, crime and intemperance is essentially the doctor's fight.

Society Report.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

(Concluded from page 135.)

WAR AND THE CHILD.

DR. SAMUEL McC. HAMILL: I have worded my subject as it has been announced that you may think of the child as part of the problem of this great war. With 5,000,000 men on the

THE REEDUCATION OF THE INJURED SOLDIER.

MAJOR R. TAIT MCKENZIE: Briefly stated the conditions which must be treated in the wounded soldier are: Injury to the peripheral nerves, scar tissue, post-operative conditions,

functional neuroses, conditions variously grouped under the name "shell shock," the "soldier's heart," which is but a symptom of overstrain; debilities. The majority of men filling our war hospitals and convalescent homes must depend for most of their present treatment and for their future efficiency upon the masseuse, the practitioner of electro- and hydrotherapy, the physical instructor, and the teacher of vocational training. The course usually followed begins with preparation by heat, either wet or dry, or produced by electricity, on through the stimulation of nutrition by massage and passive movement, then in simple exercise taken voluntarily, and eventually to skilled movements by gymnastics, games, and handiercrafts, and graduating into industrial training. The necessary equipment consists of the galvanic or continuous current, the faradic or alternating current. The high frequency current used in diathermy is useful in producing hyperaemia in deficient circulation and as a preparation for massage or movement. Radiant heat, and hydrotherapy play an important rôle in treatment of the wounded man. A description of the treatment for the various disabilities is given with an enumeration of appliances used in their correction.

THE CARDIOVASCULAR PROBLEM IN THE AVIATION RECRUIT.

DR. JAMES I. JOHNSTON, Pittsburgh: Those who have had to examine candidates for the aviation corps cannot but be impressed by the quality of the recruit physically and by his splendid spirit in the choice of his service. The greatest apprehension among candidates for all service was fear of refusal. This was particularly true of the aviators. From between eight and nine hundred men examined, about 50 per cent. were passed by us as physically fit, while only 30 per cent. were finally accepted and sent to the U. S. School of Military Aeronautics. The occupations of many of these men were that of college students, travelling salesmen for large corporations, recently athletic college men, and instructors from schools and colleges. In the cardiovascular group numbering about one hundred the analysis was confined entirely to the domain of physical diagnosis. Although these men had already been passed on by an examiner there was the occasional appearance of organic cardiac disease or a thyroid cardia in fine bal-

ance. We have learned to agree with McKenzie that murmurs in themselves have little significance. The largest number of murmurs observed were due to thyroid toxemia and were in a state of either fine balance or in unbalance. Our experience did not confirm the observation published a few years ago that murmurs at the mitral area, especially from true valvular lesions, could usually be heard in the left subclavian artery. This was of occasional occurrence only. No man with a constantly systolic pressure above 135 was accepted.

NEW MEDICAL CONDITIONS, AND DEVELOPMENTS IN PREVIOUSLY RECOGNIZED COMPLAINTS, DUE TO WAR EMERGENCY.

DR. J. M. ANDERS, Philadelphia: The main object of this paper is to emphasize the increasing importance to the medical profession in America, as hostilities progress, of the new medical developments resulting from the present great struggle. Vincent's angina has shown a greatly increased incidence under military conditions. The writer observed a case complicated with diphtheria in a sailor suffering from pneumonia. Vaccines have proven useful; the immoderate use of tobacco is to be avoided. In connection with the pneumonias, Col. Wm. H. Welch states that the enhanced virulence of the streptococcus is the most important problem in dealing with infections in soldiers in the present war. The mortality rate in empyema due to the streptococcus hemolyticus is not less than 75%, while in the form due to pneumococcus, recovery is the rule. The most approved treatment is aspiration, repeated as necessary, and intrapleural disinfection with Dakin's solution. Prophylactic vaccination against pneumonia with hemolytic streptococcus and pneumococci Types I and II is advised. In the various forms of disordered heart action in soldiers, as Hume points out, the patient must not be permitted to entertain the notion that he has a diseased heart. In the higher incidence of tuberculosis in certain foreign countries the cause in the majority of cases apparently is endogenous, while a considerable percentage may be attributed to primary exogenous infection. According to the noted phthisiologist, Sergeant, the most trustworthy physical signs of a lesion of the parenchyma of the lung are "dullness, hemoptysis, increased fremitus.

'clicks,' and a veil or shadow at the apices, fixed, not modified by cough, with striae and fly spots on the plate." In my view the examiner of recruits should rely quite as much upon a history, presence or absence of fever, the pulse, detection of bacilli in the urine and of antibodies in the blood, as upon the physical signs and x-ray findings. Also tuberculous lesions should be searched for in all other organs of the body than the lungs. The tests to be applied to keep the latent cases of tuberculosis out of military service cannot, in my opinion, be too strait. In epidemic cerebrospinal meningitis, treatment is summarized in early diagnosis and prompt treatment with serum. The treatment of trench nephritis does not differ from that in acute glomerular nephritis in civil life. Concerning trench fever the etiological organism is in the plasma of the blood but is not yet definitely discovered. While the prognosis is good, anemia and disordered action of the heart are apt to follow the severer forms. Treatment is wholly symptomatic. An assured diagnosis demands the exclusion of relapsing fever; this is possible only by microscopic examination of the blood, which shows an absence of the spirochaetae recurrentis. War edema occurs mainly among prisoners of all nationalities who are fed on German rations. Treatment consists of rest in bed and a diet of sufficient protein and at least 100 gms. of fat daily. Of the so-called "Spanish" influenza, unanimity of opinion upon the bacteriology does not at present exist. While the general opinion is that we are experiencing a pandemic of influenza such as prevailed in 1889-90, this view is to be accepted with caution and reserve.

DISCUSSION.

DR. THOMAS McCRAE: Dr. Anders' paper draws attention to the presence in the army of problems other than surgical. The cases of disturbed heart action, I fancy, are the bane of every medical man in the Army. Infection here, I think, plays a very small part. This is true also of internal gland secretion. The overwhelming factor is the nervous element. I would emphasize that there is nothing concerned with the disordered heart action as seen in the Army that one does not see in civil life. Dr. Anders suggests the possibility of aggravation by the strain of war; many of the men never get to war. One very big problem is the part played by tobacco. I think it is the

consensus of opinion that while tobacco may not have been the original cause of the condition, it plays a large part in aggravating it when once present, and it is a very difficult problem to handle in the Army. When the quantity of tobacco used by a man amounts to 40 cigarettes a day it must be realized that he is taking a drug which poisons him. The question of the proper allowance of tobacco to men with disturbed heart action should be considered. In war nephritis the persistence of the hematuria deserves particular attention. Regarding the question of a certain number of men being sent back from the French front line with a diagnosis of tuberculosis when only a certain proportion had the disease, I think there is no reflection upon the diagnostic ability of the French surgeons. It is to be remembered that all these men had lost weight, the majority had acute bronchitis with bloody sputum; signs were probably present throughout the lungs. To say whether or not they had acute tuberculosis passes the ability of any man up in the front and of the man in the base hospital until he has time to observe them. The question of the gassed patients will probably have to be met after the war. I would like to suggest that next year or the year after most of us will be handling medical conditions the result of the war.

THE FIXED FULL-TIME STAFF IN THE ORGANIZATION OF THE SMALL HOSPITAL.

DR. HAROLD L. FOSS, Danville: The paper presents the advantages of the permanent, salaried staff, particularly in its application to the rural hospital. Salary versus the fee plan is considered, as are also organization of departments, concentration of authority and responsibility. Attention is given to the relationship of such an organization to the general practitioner, the matter of fees and the handling of benevolence. The paper describes the manner in which such a plan is being worked out at the Geisinger Memorial.

SOME BLOOD CHANGES IN RATS ON CANCER-INHIBITING AND CANCER-STIMULATING DIETS.

DR. ELLEN P. CORSON-WHITE, Philadelphia: The paper is a brief study of some blood changes in rats on various diets. The effect of these diets on the blood and on: 1. growth and nutrition of rats; 2. takes, growth energy, and metastases of the experimental tumor; 3. length of life of animal after inocu-

lation. The investigation showed that all diets which gave in normal animals an approximately normal growth curve, grew large tumors with high percentage of takes; all diets which depressed the growth curve, retarded or prevented tumor growth. A study of blood of rats on these diets showed no change in numerical count of red and white cells, but a decrease in number of lymphocytes in all diets stimulating cancer growth, and an increase in all diets which retarded tumor growth. From the work it would appear that cholesterol is a factor which, while of little or no nutritive value, favors tumor growth when conditions favorable to its initiation are present.

PNEUMONIA.

DR. W. J. K. KLINE, Greensburg: To diagnose the case of pneumonia, the trained ear is essential. In treatment it must be remembered that in the inception of the disease there are sudden changes in temperature of the body, closing the pores. Active diaphoresis is therefore indicated. This may be produced by external moisture and heat and an internal remedy to create active succession of the internal organs, followed by warm potations. A saline cathartic should next be given. In the presence of arterial tension, *veratrum viride* (Norwood) used to the effective limit will reduce the heart beat to normal. It should rather be forced below the normal and thus maintained until the congested lung tissue can resume normal vascularity and the engorgement is cleared up. With this result the case is tending to recovery. Digitalis may be necessary in weak heart action. Opiates are essential in delirium. The routine use of *veratrum* should, of course, be discouraged, as should such use of all drugs. In pneumonia the object should be to slow down the pulse and give the heart opportunity to work normally. Here the Norwood tincture is the most reliable drug. In the adult it should be used in doses of eight to ten drops every two hours, the dose to be reduced or increased as required to bring the pulse rate down to 80 or 60 beats rapidly until nausea is indicated, when the rate will be lowered. This rate should be maintained for 24 or 48 hours and will be an important factor in clearing up the congestion.

DISCUSSION.

DR. CHARLES RAE, York: In the Civil War twice as many people died from disease as

from war injuries. In the present war pneumonia has appeared with great significance. In the hemolytic streptococcus pneumonias there is a paucity of progress in treatment. Since the preponderance of cases follow measles, therapeutics should be directed against prevention. We feel warranted in assuming that four types only of the pneumococcus are concerned in the etiology of lobar pneumonia. Much additional light is needed in our understanding of streptococci pneumonia. Evidence indicates that lobar pneumonia is a contact disease. In treatment, first in importance should be the avoidance of polypharmacy, in the form of drugs or bugs. Early digitalization is probably wise, not for its immediate effects upon the heart, but that the patient may respond quickly to digitalis by the mouth should it be suddenly needed. For the cough and pain, morphine hypodermatically and sufficiently frequently to dull the sensibilities I find most efficient. Turpentine in enemas and stupes is the best means of combating abdominal distention. The serum treatment in Type I infection of lobar pneumonia has probably reduced the mortality to about one-third of the original record. It is not, however, an ideal treatment. In the treatment of streptococcus bronchopneumonia there is little to offer but preventive measures and intelligent care.

DR. S. SOLIS-COHEN, Philadelphia: My former feeling that routine mixtures of stock bacteria were useless and unscientific has been completely changed since my observation at Fort Oglethorpe of the work of Majors Smith of Uniontown, Dare and Bergey of Philadelphia, in preparing a vaccine from streptococci, staphylococci, micrococcus catarrhalis and four types of pneumococci and finding that the mortality in patients receiving this was less than six per cent.; that the patients did equally well with those of Type I who were treated with the specific Type I serum of the Rockefeller Institute; and, moreover, did not develop empyemic complications with the same frequency as those treated with the serum.

SOME RECENT RESULTS OF COÖRDINATION OF LABORATORY AND CLINICAL RESEARCHES IN PNEUMONIA.

DR. S. SOLIS-COHEN, Philadelphia: The paper embodies a report of results of coördi-

nated research by Drs. Kolmer, Heist, Steinfeld, Weiss, and the author, showing the chemotherapeutic activity of cinchona derivatives against pneumococcus *in vitro* and *in vivo*; the inferiority of optochin to ordinary quinine compounds in human pneumonia; pneumonia poison in the human lung; inhibiting effect of quinine on this and pneumotoxins; Lacy-Heist method of studying immunological power of whole circulating blood. Immunity of certain individuals and birds against pneumonia. Bacterins (vaccination) and quinine mouth washes as preventives.

DR. DAVID RIESMAN, Philadelphia: In no disease is the close coöperation of laboratory workers and clinicians more opportune than in pneumonia, which is by all odds the most fatal and most serious infectious disease we have to deal with in this climate. I cannot feel that quinine is a specific in pneumonia. Of serums we have but one which is of value. The problem of pneumonia must be attacked more from the point of prevention than hitherto. From the standpoint of a sanitarian and a physician, one of the most important discoveries is that a healthy carrier may spread the disease.

DR. GEORGE D. HEIST, Philadelphia: In our research work we found that the serum of one man who had received five and sometimes ten grains of dihydrobromide every three hours over a period of a number of days killed pneumococci with great regularity after an exposure of 24 hours. In other cases the pneumococci were very decidedly inhibited in their growth. The bactericidal element in the serum was proportionate to the quantity of quinine received by the patient. The dihydrobromide was the most active salt. The serums of recovered patients and of those who received no quinine showed no bactericidal action. Dr. Cohen had long pointed out to us that the patient with pneumonia does not feel the quinine as does one not having the disease. This observation was confirmed to me in our work.

DR. COHEN, closing: Quinine, so far as I know, has never been put forth as a specific in pneumonia. I would say rather, that midway between the expectant treatment and treatment by serums and bacterins is the definite method of treatment by quinine; quinine in a definite way and for a definite purpose;

and in my own experience over many years no other medicinal treatment is equal to it.

LABORATORY METHODS; THEIR VALUE AND PRACTICABILITY IN GENERAL MEDICINE.

DR. M. HOWARD FUSSELL, Philadelphia: The paper is a plea for accurate diagnosis, possible only by history taking, through physical examination, and routine laboratory examinations. The man does not live who can guess at conditions and not sooner or later take a cropper. I would advise the man not educated in the more accurate diagnostic methods to associate with himself a young man to do this routine work for him. A kit with instruments of precision is shown, rendering practicable the making of diagnosis in conditions met every day by the general practitioner.

DR. HENRY RHEA DOUGLAS, Harrisburg: A case illustrating the force of Dr. Fussell's plea is that of a boy of nine treated for years for an eye condition accompanied by anemia and glandular enlargement. Subsequent examination upon the principles urged showed a Wassermann reaction plus four.

DR. H. W. MITCHELL, Warren: Laboratory study practically settles all doubt in diagnosis in a large group of patients admitted to the hospitals for the insane.

DR. PAUL G. WESTON, Warren: I would enter a plea for the more frequent use of lumbar puncture for diagnostic purposes. The technic is simple and does not require extraordinary skill. I feel also that the chemical analysis of the blood should accompany urinalyses.

DR. CHARLES RAE, York: To be borne in mind in making our diagnosis is the relative unimportance of negative findings. I would emphasize the importance to every man with a large practice of having a trained assistant to do his laboratory work.

SOME DRUG ERUPTIONS.

DR. M. B. HARTZELL, Philadelphia: Drug eruptions are those produced by the ingestion of drugs, or their absorption by the skin or mucous membranes; those arising from contact belong to another category. A very large number of drugs produce eruptions, but rela

tively few affect all individuals. The same drug does not always produce the same form of eruption. The iodides usually produce an acneiform eruption, but may cause more serious conditions; the same is true of the bromides. The hypnotics frequently produce eruptions of varying character; those resulting from the administration of veronal are often accompanied by severe itching and burning; a chronic pruritus may be a symptom of opium addiction. The preparations of arsenic occasionally produce herpes zoster; they cause a variety of keratosis possibly followed by epithelioma. Arsphenamin sometimes causes a violent dermatitis with symptoms of nephritis. In the presence of an unusual form of eruption the possibility of its drug origin should be considered.

DR. JULIUS H. COMROE, York: An instance of idiosyncrasy to drugs given me by Dr. B. A. Thomas is that of the administration of 270 grains of potassium iodide three times a day in ascending doses for almost three months without producing the least suggestion of a rash. In another case the administration of three grains developed a most intense rash. Rather than advise routine ascending doses it would seem better practice to treat each case as an individual entity, and upon the slightest evidence of a rash, either diminish or interrupt the dose; also by giving more attention to the emunctories during the administration of bromides, iodides, etc., we would be meeting in a better way the prophylactic requirements of the problem.

THE PLACE OF THE MEDICAL INSPECTOR IN PREVENTIVE MEDICINE.

DR. CLARENCE R. PHILLIPS, Harrisburg: The age incidence of contagious diseases shows them to be diseases of childhood. This is largely because of compulsory education, which brings all children of a community into close contact for five hours daily for five days weekly. Since compulsory education is a necessity, this problem of preventive medicine is distinctly "up to the State." The instrument for such protection in the present scheme of the State Department of Health is the county medical inspector. Parents must be educated, teachers must be instructed, and in some cases stern measures may be required to

enforce the provisions of the new school code pertaining to communicable diseases. It has been suggested that instruction should be given teachers along the line of their duty in the prevention of disease.

DR. WILMER KRUSEN, Philadelphia, Director of Health: The laws regarding sanitation and quarantine represent the sentiment of the best men in the profession; I believe that county medical inspectors have a right to expect sincere coöperation in the stamping out of preventable diseases. No quarantine will be popular until we can develop a lay conscience, making the family realize that the rights of the individual cease where the rights of society begin. Until we develop the conscience of the practitioner who sees these cases in their incipency we shall not eradicate communicable diseases. The matter is one of education rather than of legislation.

X-RAY EXAMINATION OF THE HEART AND GREAT VESSELS.

DR. G. W. GRIER, Pittsburgh: X-ray examination of the heart gives information concerning size, contour, location, pulsations, and the influence of respiratory movements upon that organ. The pulsations and the influence of respiratory movements are determined only by the use of the fluoroscope; the other facts, by radiogram or the fluoroscope. I have seen only two cases in which the heart was unquestionably too small for the performance of normal function. In each instance the organ was about the size of a base ball. The normal heart may vary in size between rather wide limits. The athletic heart is often hypertrophied. The small "drop" heart is supposed to indicate predisposition to tuberculosis of the lungs. In the large transverse heart its long axis is nearly at right angles to that of the body. I have fluoroscoped one case of heart block. The slow massive contractions of the left ventricle occurred about twenty times to the minute, while the rapidity of the contractions of the right auricle was extraordinary. The x-ray is of distinct advantage in considering the size and contour of the heart. In the differential diagnosis of aneurysm of the aorta and solid tumors in the mediastinum, both fluoroscope and radiograms should always be used.

American Medical Biographies

MUMFORD, JAMES GREGORY (1863-1914).*

JAMES GREGORY MUMFORD, of Boston, eminent as a surgeon and still more eminent as a writer, both upon pure surgery and upon a number of topics related to medicine, in lighter vein, was the son of George Elihu and Julia Emma Hills Mumford. He was born in Rochester, N. Y., in 1863 and died at Clifton, N. Y., October 18, 1914.

The Mumfords were of North of England stock, the first of the name settling at Newport, R. I., in 1655. The family subsequently moved to New London and Dr. Mumford's grandfather began the practice of law at Cayuga, N. Y., in 1795. In all these years the Mumfords were citizens of the best type, always prominent in local affairs and adding to their prestige by marrying into noteworthy New England families, such as the Winthrops, Dudleys, Saltonstalls, to whose influence may be attributed many of the qualities of the subject of this sketch.

Dr. Mumford prepared for college at St. Paul's School, Concord, an institution to which he was always intensely loyal and of which he eventually became a trustee. He entered Harvard as a member of the class of 1885 and graduated from the Harvard Medical School in 1890, serving as House Officer at the Massachusetts General Hospital in 1890-91. He had further admirable surgical training from acting as assistant for some years to the late Dr. M. H. Richardson. At college Dr. Mumford enjoyed life thoroughly and was by no means a "dig;" yet he gave abundant evidence of that bookishness that was so marked a characteristic of his later life. After the usual chances to show what was in him, offered by sundry out-patient appointments and as Surgeon at the Carney Hospital, he was taken into the staff of the Massachusetts General Hospital, and in due course of time rose to the position of visiting

surgeon. His surgical work, while not of a pyrotechnic nature, was good work, tempered by remarkably sound judgment.

In 1892 he was very happily married to Helen Sherwood Ford of Troy, N. Y. There were no children.

As do most of the staff of the Massachusetts General Hospital, Dr. Mumford taught a certain number of the students of the Harvard Medical School. He enjoyed teaching, and apparently his students enjoyed being taught by him. While he was not one of the great teachers, it is very probable that had he risen above the rank of "Instructor" his success in this field would have been much greater, for he had the rare faculty of saying things in the way to make them remembered.

Thus far the record of Dr. Mumford's life is that of any successful surgeon. He had, however, other claims to our regard. The bookishness already hinted at felt the need of constant expression, and the dozen books and sixty or more medical articles he published in the course of twenty years attest sufficiently to the alertness of his mind. The wide range of his taste is shown by the titles of his best-known books: "Mumford Memoirs," "A Narrative of Medicine in America," "Clinical Talks on Minor Surgery," "Surgical Aspects of Digestive Disorders," "Surgical Memoirs and Other Essays," "Practice of Surgery," "One Hundred Surgical Problems," and "A Doctor's Table Talk." He edited the "Harvard Medical School: a History" (1905) with Dr. Thomas F. Harrington. Medical history appealed to him strongly, and besides sundry articles on bygone worthies, he wrote the chapter on the history of surgery in Dr. Keen's "System of Surgery." His more fugitive medical writings cover nearly the whole range of surgery. Dr. Mumford had none of the literary slovenliness so often found in medical writings. To him good style was quite as important as good matter, and he took extraordinary pains to use the right word. His style was alive and individual, a style one remembers with pleasure, a style that makes his "Practice of Surgery" read almost like a novel,—no mean achievement. As an example of his happy facility in using words, I will quote a few lines from a letter to his class secretary, written in 1910: "So the simple record

*From the forthcoming "American Medical Biography" by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

runs on, telling of mild employments in the Harvard Medical School and elsewhere. I like teaching: students pass me out the usual compliments due to credulous senility (he was then 47). I like practising surgery; patients toss me roses mingled with thorns. I like writing about people and things, for the reviewers deal me comments which chasten the soul. Altogether, life continues a pleasant experience."

But perhaps Dr. Mumford's greatest claim to be remembered is not for what he accomplished, but for what he hoped and tried to accomplish and did not, for many of the things he had most at heart are now being gradually worked out much as he hoped they might be. He was a man before his time and essentially a reformer; not of the irritating, aggressive type to whom we surrender out of sheer boredom, but the quiet persistent kind of man, who sees clearly what he feels ought to be done and keeps his goal steadfastly in mind, in spite of hostile criticism and constant failures.

He was firmly convinced of three things: first, that in many cases religion is quite as potent a remedial agent as is medicine, or rather that in many cases the clergyman might coöperate with the doctor to the manifest benefit of the patient. Hence he became closely identified with the "Emmanuel Movement," led by Rev. Elwood Worcester, a movement the success of which has been by no means commensurate with the hopes Dr. Mumford held. Now, however, that the fires of battle no longer rage, many of us are beginning to have a much more just view of what the movement stands for.

Secondly, as far back as 1906, he foresaw that the time was coming when great medical schools like Harvard should have professors whose chief business was to teach, and to whom teaching was not merely an incidental in a very busy life. The idea then seemed Utopian and Mumford was rather laughed at for entertaining it, yet now, after his death, it is in the way of accomplishment.

The third and probably most profound conviction in his life was that, while the rich and the very poor get good medical care, there is no provision under our modern conditions by which the man of slender purse, yet by no means a "charity patient," can obtain the services of really competent specialists. To this end in 1910 he devoted much thought and labor for the establishment of a fully equipped

modern coöperative hospital for people of moderate means, of which he was to be the surgical head with Dr. R. C. Cabot in charge of the medical side, and under them a staff of good specialists. It was perhaps the deepest disappointment of Mumford's life that this scheme got no further than its prospectus. Undeterred, however, by this failure, he soon embarked upon a cognate undertaking of far more grandiose scope. Ill health rendered it necessary for him to resign from the Massachusetts General Hospital, and in 1912 he accepted an invitation to become physician in chief to the Clifton Springs (N. Y.) Sanitarium. Understanding that he was to be given a practically free hand, he set about gathering around him a body of brilliant, well equipped younger men, hoping to change the time-honored Sanitarium from a resort more or less for valetudinarians into an actively constructive institution, not for the very rich, perhaps, but primarily for the only moderately well-to-do, where at no ruinous expense they could command the very best medical care. Differences of opinion as to policies led, however, to his resignation some two years later, with his dream only partly realized. Meanwhile, during his short stay at Clifton he had made a host of friends, and his appointment as trustee of Hobart College is only a token of the esteem in which he was held in Western New York.

I have referred to Dr. Mumford's bad health. The last dozen years of his life were one constant struggle with a failing heart, under stress that most men would have accepted as a stern warning that it was time to retire. After each bout with his enemy, Mumford returned to the fray with indomitable hope and enthusiasm. Such a gallant struggle against pitiless odds is seldom recorded.

Dr. Mumford was a member of the various medical societies to which most of us belong, and although he much preferred his own fire-side he was a member of the Somerset and other good social clubs, while his interest in his fellow men led him to join the Economic Club, the Reform Club, and other similar bodies identified with civic uplift. His historical tastes naturally led him into the Society of Colonial Wars.

MALCOLM STORER, M.D.

Data have been obtained from classbooks of the Class of Harvard, 1885, from an Appreciation by Dr. Richard C. Cabot, published in the *BOSTON MEDICAL AND SURGICAL JOURNAL* of April 1, 1915, and also from what the writer very vividly remembers of a dear friend.

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SPURZHEIM AND PHRENOLOGY.

ABOUT a century ago, considerable interest was aroused by the work and teachings of Dr. Spurzheim, whose investigations in phrenology caused many people of his generation to believe this subject a promising field of scientific activity. There has recently been received a letter containing reminiscences about Spurzheim which may be of interest to the profession. The esteem in which he was held is denoted by the following extract:

"In my father's day the doctors were enthusiastic over Dr. Spurzheim from Vienna, and spoke as if his name would always be remembered. Nahum Capen wrote an interesting account of Spurzheim, and his visit to Boston and death there."

This biography describes Spurzheim's life,

purpose, and achievement. He was born on December 31, 1776, in Longvick, a little town on the Moselle River, in territory under Prussian domination. He received his college education at Treves, and later studied medicine in Vienna, where he came under the influence of Dr. Gall, the founder of phrenology. In 1813, he received his degree of M.D. in Vienna. He then went to England and Scotland, where his theories were bitterly criticized and ridiculed, until his lectures on anatomy and the functions of the brain and its connection with mind made phrenology a topic of public interest.

In 1817, Spurzheim published a book on *Insanity*, which presents the author's theories on deranged mental conditions. He considers the disorders of the external functions of the mind—voluntary motion and the five senses—and the internal manifestations or diseases of the brain. The main portion of the book deals with insanity. Spurzheim enumerates various symptoms and describes in detail many forms of insanity. He reports conditions discovered during his investigations and offers suggestions for treatment by both moral and medical means. He emphasizes the cruelty of treating insane persons as prisoners, and discusses the relative values of coercion, occupation, and personal interest.

Spurzheim went to Paris in 1817 and made his permanent home there. His teaching was for a time severely ridiculed; but his perseverance and earnestness temporarily gave to phrenology the status of a reputable science. While in Paris, Spurzheim also practised medicine, but this was never his favorite occupation. In 1825, Spurzheim returned to London, where his subject was then treated with respect and candor, and his views generally accepted by the public. Medical journals commented favorably upon his works and phrenological societies were formed in both England and Scotland.

At this time, Spurzheim published several books in English. One of these, "Phrenology in Connection with the Study of Physiognomy," to which Nahum Capen later prefixed his biography of Spurzheim, sets forth Spurzheim's doctrines of phrenology. The first part of the book is divided into two sections: in the first, he makes observations on bodily configuration and organic constitution generally, in connection with adaptation to peculiar functions; on the difference in heads and faces of individuals whose characters are opposed to each

other; and on the difference between heads of the sexes and of various nations. Illustrations are given of immoral and moral, religious, independent, ambitious, humorous, timid, bold, and prudent persons. In the second part of the book, Spurzheim compares the characters and accompanying cerebral organizations of numerous types.

In 1832, Spurzheim visited the United States, with two objects: 1, To study the genius and character of our nation; 2, to propagate his doctrines of phrenology. The subject was new to the United States; so far as it had become known it was perverted and misunderstood. Spurzheim visited New York, Hartford, and Boston, and everywhere he delighted his audiences. In Boston he gave lectures on the anatomy of the brain which excited wide and lively interest. Many persons who attended at first to collect material for ridicule and amusement became converted to his ideas. Spurzheim visited our institutions of beneficence, prisons, and schools. His activities resulted in overexertion, and he died in Boston on November 10, 1832. The letter previously quoted contains, also, the following account of the funeral:

"It seems the funeral was held in the Old South Church, with about three thousand present, and hundreds turned away. The Boston Medical Association accompanied the casket to the church. There was a dirge on the organ by Zeuner, prayer by Reverend Joseph Tuckerman, oration by Professor Follen, and an ode by Reverend John Pierpont, sung with great effect by the Händel and Haydn Society."

Spurzheim's death caused universal and sincere feeling of grief throughout Boston, and was regarded as a public calamity. On November 17, several of Spurzheim's friends agreed to organize the Boston Phrenological Society, for the purpose of investigating the principles of phrenology. Nahum Capen gives the following estimate of Spurzheim's character:

"Regarding Dr. Spurzheim as a man, we find all that dignifies and adorns the human character. He was distinguished for his superior mind, and his meek and amiable manners. He was kind and affectionate to his friends, and charitable to his opponents. He was liberal, prudent and industrious. His benevolence was not of a limited character, having motives of selfishness for its origin, but extending to the whole family of man."

PALEONTOLOGY AND MEDICAL HISTORY.

THE relation of paleontological data to medical history presents a subject of interest to the profession. An article published in a recent issue of *Science* discusses the evidence which these prehistoric remains afford in relation to diseases of the present day. Pathological lesions, especially those of the bones, have retained their characteristics for thousands of years, and give distinct evidences of disease as far back in geological time as the Carboniferous. Reasoning from the theoretical aspects of paleopathology, on the basis of possible parasitism of early hosts, disease may have originated in the Archeozoic, but there is no definite recorded evidence prior to the Pennsylvanian.

These ancient lesions, which paleontologists have mentioned only incidentally, are of extreme importance in tracing the origin and antiquity of phenomena which are vitally important to humanity today. That the study of these evidences may aid in the solutions of problems which are at present not solved is evident when we consider that many epidemics which sweep the world, such as the one just past, are doubtless the result of an accumulation of changes over a long period of time. It is well known in medical history how whole populations have been swept away by scourges which, had the people understood them, could have been avoided; and in the future, when we come to understand all of the events of past history, we may be better prepared to avoid future conditions of similar nature.

The careful description, illustration, and study of ancient cases of fracture, of diseased bones, or any evidences of pathology is desirable and will advance the study of paleopathology. Evidences of disease may be detected in the positions assumed by animals at death. The Mesozoic fracture extends the medical student's knowledge of traumatism. Other questions, such as the relation of disease to extinction, the part disease has played in the evolution of forms, whether retarding, changing, or ending their development, may be solved eventually by the data which are being collected by paleontologists.

DEATH OF A ZEALOUS PUBLIC HEALTH WORKER.

THERE are many in Boston and Massachusetts who will learn of the death of Edward A. Ingham, M.I.T., '14, with painful surprise. He was a native of Topeka, Kansas, identified while in this State with a number of public-spirited health movements. He was a graduate of Washburn College at Topeka, and on the occasion of the well-known investigation of eggs in Kansas that was conducted by Dr. W. T. Sedgwick and his assistants, he became interested in the matter, and later came East to study at the Institute. Following graduation, he was appointed assistant in the department of biology and research, assistant in the sanitary research laboratory. He was advanced to instructor and research associate in 1914 and remained with Technology until 1917.

Concerning his assistant and fellow worker, Dr. Sedgwick notes that he was a hard worker, a good investigator, and a first rate teacher. He had high standards and lived up to them. He was full of energy, aggressive, ambitious, and able. We were sorry when he left the Institute to accept the responsible position of district health officer of the State Board of Health of California.

While in Boston, Mr. Ingham conducted for the M. I. T. Sanitary Research Laboratory an investigation of Massachusetts rural health conditions and the activities of local boards of health. He managed for the Public Health Committee of the Massachusetts Medical Society a public health school for health officers, the first of its kind in Massachusetts.

His last letters to Boston indicate the severity of the influenza situation in California, and it was in his work of combating the dread disease that he was himself stricken and died.

Dr. Sedgwick characterizes the death of Mr. Ingham as not only a loss to his friends, but a calamity to public health work, since without medical degree he had made for himself, through his engineering abilities, an enviable name and station.

\$10,000 GIFT TO HOLYOKE HOSPITAL.—\$10,000 has been given to the Holyoke City Hospital for the establishment of a children's ward.

INFLUENZA EPIDEMIC IN THE UNITED STATES.

It is impossible to estimate exactly the prevalence of influenza in the United States because the reporting system, in many instances, has been inadequate. The Public Health Service has collected most of the information which is now available, and the report issued for December 27 reviews the conditions of the epidemic.

The epidemic became nation-wide in four or five weeks after it appeared in epidemic form in the first localities which were affected. It is believed that sources of infection were well distributed in the largest cities some time before the disease became epidemic. The diseases reached the epidemic stage at about the same time in all parts of the country; the noticeable radial spread of influenza confirms this hypothesis. A total of nearly 350,000 deaths have been reported. In comparing mortality rates for various localities, it has been found that there has been no definite relation between the mortality rate and the size of the locality. As a rule, as the epidemic spread, its severity decreased. The course of the epidemic has naturally varied in different cities; this variation has depended upon such conditions as the occurrence of previous epidemics of similar or related diseases, the type of the locality, the composition of the population, and the methods adopted for controlling the epidemic.

The field studies in Baltimore show that the case incidence of the disease was high in all ages up to 45, while the fatality rate was very low in school children and relatively low among persons from 45 to 60 years of age.

MEDICAL NOTES.

INFLUENZA IN ITALY.—A report from Italy states that there have been 800,000 casualties in the present influenza epidemic in Italy.

ARMY HEALTH CONDITIONS.—Health conditions in the army at home showed continued improvement during the week ending January 3. Influenza and pneumonia are still on the decline. Only two camps, Camp Travis and the port of embarkation, Hoboken, reported more than 100 new cases of influenza for the week.

The War Department summary for January 10 showed 359 new cases of pneumonia among

approximately 600,000 troops. Hospital admission and non-effective rates generally were lower than in the preceding week, with 197 deaths from all causes.

RED CROSS HOSPITAL AT ARCHANGEL.—A base hospital of 100 beds has been established at Archangel by the American Red Cross. Eighty patients, almost all of them Americans, are already receiving treatment.

RED CROSS MEMBERSHIP.—The Red Cross Roll Call in New England up to January 1 shows an adult membership of 1,525,140. With a junior membership of 600,000, this gives New England a total of 2,125,140—the largest organization ever known in this section of the country. The complete returns will not be available for a week or more. On the returns so far, Maine has 138,800; New Hampshire, 121,000; Vermont, 85,000; Massachusetts, 1,038,340; and Rhode Island, 142,000.

The membership last year, exclusive of juniors, was 1,145,500.

THE BRITISH MEDICAL RESEARCH COMMITTEE.—In a recent issue of *Science*, the following note on the activities of the British Medical Research Committee has been published.

"The committee has acted jointly with various government departments or other bodies, either in appointment or in nomination, with a view to meeting particular administrative needs demanding research work. The committee has a number of special committees, including those on the incidence of phthisis in relation to occupation; on surgical shock and allied conditions; on the standardization of pathological methods; on salvarsan; on chemical warfare medical investigations; on anaërobic bacteria and infections; on accessory food factors ('vitamines'); on air medical investigations; and on dysentery. There is also an industrial fatigue research board, appointed last June by the Department of Scientific and Industrial Research jointly with the Medical Research Committee, to consider and investigate the relations of the hours of labor and of other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and of the preservation of health, among the workers.

"Cordial coöperation has been received from the Advisory Council of Scientific and Indus-

trial Research, established in 1915. The field of research in every pure science, not less than that of inquiry in industrial science, lies so close at very many points to the fields of medical research, that no boundary line can be drawn. The committee looks forward to the progressive development in this coöperation with the department of scientific and industrial research, and finds new hope for the increasing effective organization of research work in all directions."

INFLUENZA IN INDIA.—Influenza has been prevalent in India. The number of deaths in the Punjab is estimated at 250,000. When the final results of the epidemic are summed up, it will probably be found that other provinces have suffered on approximately the same scale. No part of the country seems to have escaped, although the visitation was lightest in Bengal, and even the dry and bracing Himalayan tracts are reported to have been severely attacked. The population of the Punjab and the Punjab native states is about 24,000,000, and of the whole of India about 315,000,000. If the influenza death rate proves as heavy throughout India as in the Punjab, this would give a total death roll of over 3,000,000. It is planned to establish a Medical Research Institute in Bombay on the lines of the Rockefeller Institute to which large donations have already been promised.

AWARD OF THE PERKIN MEDAL OF THE AMERICAN CHEMICAL SOCIETY.—The Perkin medal of the American Chemical Society has been awarded to Dr. F. G. Cottrell, of the U. S. Bureau of Mines, for his work on electrical precipitation.

HONOR FOR AMERICAN PHYSICIAN.—Dr. Livingston Farrand, president of the University of Colorado and of the Rockefeller Anti-tuberculosis Commission, has been named an officer of the Legion of Honor on the proposal of Captain André Tardieu, French high commissioner to the United States.

THE YELLOW FEVER EXPEDITION OF THE ROCKEFELLER FOUNDATION.—Dr. George R. Vincent, president of the Rockefeller Foundation, has announced that with the cessation of hostilities in France the Foundation will renew its peace activities. Its international health board will renew at once, in coöperation with local authorities in South and Central America, its combat against yellow fever. Dr. William C. Gor-

gas, retired Surgeon General, will direct the work. Dr. Vincent is reported to have issued the following statement:

Dr. Gorgas will sail within a short time for Central and South America. Dr. N. E. Connor has already preceded him to Guayaquil, on invitation of the government of Ecuador. He will guide the local operations, which will be done by men appointed by the local authorities.

The program which General Gorgas will now actively develop, results from a study of the yellow fever problem by the International Health Board, which began its labors in July, 1914.

The opening of the Panama Canal, with the establishment of new world trade routes, brought the danger of a wide distribution of yellow fever. Its appearance in Asia, for example, would be a catastrophe.

To obtain authoritative information and counsel, the board appointed a yellow fever commission, headed by General Gorgas. Associated with him were Dr. Henry R. Carter, of the United States Public Health Service; Dr. Juan Guiteras, chief health officer of Havana; Major T. C. Lyster and Major E. R. Whitmore, of the Medical Department, United States Army, and Mr. W. D. Wrightson.

To define the problem accurately, the commission, in the spring and summer of 1916, visited all countries in South America in which yellow fever had appeared in recent years. On its return it presented a report, expressing the opinion, in which all members of the commission concurred, that the total eradication of yellow fever was feasible.

In January, 1917, the board adopted a working program and appointed Dr. Gorgas director. The Secretary of War had agreed to release the surgeon general for this service, but the war compelled a postponement of the work which is now to be resumed.

SOUTH BALTIMORE GENERAL HOSPITAL.—At the recent opening at the South Baltimore General Hospital Dr. Llewellys F. Barker, of the Johns Hopkins University, and Dr. Jane E. Nash, superintendent of the Church Home and Infirmary, made the principal addresses.

NEW YORK ACADEMY OF MEDICINE.—The anniversary address of the New York Academy of Medicine was delivered on December 5, by Edwin G. Conklin, professor of biology in

Princeton University, on "The Biology of Democracy with Special Reference to the Present World Crisis."

CHAIR OF MEDICINE IN THE UNIVERSITY OF BELGRADE.—Over £2,500 of the £12,000 required has been subscribed to the chair of medicine which is to be established in the University of Belgrade, as a memorial to D. Elsie Ingles.

RHODE ISLAND MEDICAL SOCIETY.—At the annual meeting of the Rhode Island Medical Society, the trustees of the Fiske Fund proposed the following subject for the prize essay for 1919: "Recent Classification and Treatment of Pneumonia." The prize for the best essay is \$200. Each competitor must forward to the secretary of the trustees, on or before May 1 of the year of the competition, a copy of his dissertation. The trustees are Drs. Gardner T. Swarts, John M. Peters, and Jesse E. Mowry, all of Providence. Dr. Peters is secretary.

McCLENATHAN HALL OF SCIENCE.—By the will of the late Dr. John C. McClenathan, Connelville, practically his entire estate, valued approximately at \$160,000, will be left, after the death of his widow, to Washington and Jefferson Colleges, to erect a building to be known as the McClenathan Hall of Science.

THE LOYOLA UNIVERSITY SCHOOL OF MEDICINE.—The Loyola University School of Medicine has recently been reorganized. The buildings and equipment of the Chicago College of Medicine and Surgery were purchased in September, 1917, making an important addition to the resources of the school. In the department of anatomy Dr. R. M. Strong, professor of anatomy at Vanderbilt University Medical School, has been appointed professor and head. Dr. Thesle T. Job has been made assistant professor of anatomy.

INFLUENZA IN MOTOR TRANSPORT CORPS.—On January 14, three cases of influenza were reported in the Motor Transport Corps.

INFLUENZA IN MARYLAND.—Since January 1, 18,496 cases of influenza have been reported to the Maryland Board of Health. For the entire month of December 13,000 cases were reported. In spite of these figures the health offi-

cials have determined not to close schools and theatres, but to impress upon the public the necessity of coöperation in eliminating the disease.

In the City of Baltimore, 105 influenza cases and 5 deaths, with 14 deaths from pneumonia, were reported on January 13, for a 48-hour period.

INTER-ALLIED FELLOWSHIP OF MEDICINE.—Post-graduate courses in medicine, similar to those already established in Paris, will soon be inaugurated in London for American and Dominion army medical officers. In the opinion of the *London Times* this will tend to draw more closely together allied schools of medicine.

HEALTH SUNDAY, FEBRUARY 9.—Dr. Rupert Blue, Surgeon General of the Public Health Service, has issued a proclamation to the ministers of the country asking them to set aside Sunday, February 9, as health Sunday, and to preach sermons on that day emphasizing the duty of the nation to protect returning soldiers and sailors and the community in general from social diseases.

"The Government of the United States is asking the churches of the country to take an active part in meeting a great national emergency.

"The war made it necessary for the nation to face frankly and courageously the menæce of venereal diseases. Now the war is over and the period of demobilization has begun, drastic measures must be taken to prevent, during this period, those conditions in civilian life which made these diseases the greatest cause of disability in the army.

"In the army and navy a program of law-enforcement, medical measures, education, and provision for wholesome recreation was adopted. This program brought results. The venereal rate was lowered below that of any army of any nation in the history of the modern world.

"Now that the war is over, the cities and towns through which the soldiers and sailors will go and to which they will return upon demobilization must be made as safe as the camps from which they have come. The fight against this menæce to our national vitality and to our homes must be vigorously continued.

"It is the social responsibility of the communities of which the churches of every denomination are a part, to continue the work

carried on in time of war in order that the world may be made safe, not only for democracy, but for posterity."

EXPERIMENTS WITH POLYNEURITIS.—The relation between dietary deficiencies and disease presents a problem of increasing interest. Experiments with animals have proved that certain diseases, of which beriberi is the best known example, are due to the absence from the diet of some definite substance which is essential for normal nutrition. A recent report issued by the Public Health Service gives the results of attempts made to produce polyneuritis in laboratory animals. Polyneuritis has been produced in cats and dogs by means of an exclusive dietary of lean beef which was heated for three hours at 120° C. in the presence of alkali. The animals showed a diminution of appetite, constipation, loss of body weight, weakness, and sometimes drowsiness, followed by paralytic symptoms, tonic convulsions, spasticity of certain groups of muscles, and disturbances of the circulation and respiration. It was discovered that the oral administration of active preparations of the antineuritic substance of yeast to paralyzed animals caused the symptoms to disappear.

ANTIVENEREAL CAMPAIGN.—The United States Public Health Service Report, issued for January 3, contains a report of the antivenereal campaign which is being conducted throughout the country. Under the Chamberlain-Kahn Act, provision is made for Federal aid in this work in states complying with certain conditions. The Division of Venereal Disease, in conjunction with State boards of health, is conducting, at present, approximately 125 clinics. Additional facilities are needed to treat the increased number of cases which are being reported each month. The Division is conducting 25 clinics in conjunction with the Red Cross, in extra-cantonment zones. Social service and follow-up work is carried on by all these clinics. In addition, educational work, including pamphlets, exhibits, conferences for educators, and lecture tours, is being broadened constantly.

During the period of reconstruction, efforts to control venereal disease will be intensified. The entire area of the United States will be covered by a cooperative campaign, in which national, state, and local agencies will coöperate.

FACILITIES FOR TREATMENT OF TUBERCULOSIS.

—Statistics show that the entire number of beds for tuberculous patients in the United States at the present time does not exceed 60,000. It is estimated that there are at least 2,000,000 active cases of this disease in the country. The problem which would arise if only one-tenth of this number of persons should wish to avail themselves of hospital treatment during the coming year is one which the anti-tuberculosis organizations are trying to solve.

MEDICAL SERVICE IN WESTERN SIBERIA.—

There is urgent need for doctors, nurses, and medical supplies in Western Siberia. Dr. Arthur Rudolph Tensler, head of the Czechoslovak medical service, believes that the spread of typhus and the arrival of 200,000 Russian soldiers, formerly imprisoned in Austria and Germany, will tax every agency to the utmost. He directed the establishment of Red Cross hospitals at Omsk, Ekaterinburg, Tseliabininsk and Tiiman. The public bathhouse at Ekaterinburg has been converted into a typhus hospital. It is probable that Russian prisoners will continue to return to Western Siberia for at least two months.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending January 18, 1919, the number of deaths reported was 395 against 306 last year, with a rate of 25.86 against 20.29 last year. There were 47 deaths under one year of age against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 67; scarlet fever, 38; measles, 11; whooping cough, 25; typhoid fever, 2; tuberculosis, 61.

Included in the above, were the following cases of non-residents: Diphtheria, 4; scarlet fever, 9; tuberculosis, 1.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 2; typhoid fever, 1; tuberculosis, 25.

Included in the above, were the following non-residents: Diphtheria, 2; scarlet fever, 2; tuberculosis, 1.

Influenza cases reported, 1,127; influenza deaths, reported, 130, of which 16 were non-residents.

were reported to the Boston Health Department; on January 11, the number of deaths increased to 28. These figures show a decrease in the mortality rate; for, during the preceding week, the number of deaths reported daily averaged 35.

On January 12, 210 new cases of influenza were reported to the Boston Health Department. To the State Department of Health, 966 new cases were reported, with 29 deaths from influenza and pneumonia. The following reports, in several instances covering more than one day, were received from various cities and towns:

Boston, 210; Medford, 54 (two days); Revere, 52 (eight days); Worcester, 43 (several days); North Andover, 41 (one month); Cambridge, 39; Somerville, 37; Newton, 36; New Bedford, 36; Quincy, 33; Haverhill, 26; Lawrence, 26; Lowell, 25; Chelsea, 19; and Holden, 13.

Dr. Woodward, Boston Health Commissioner, has reported that the daily death rate from pneumonia for last week was 6.7; while during the same week last year, when there was no epidemic, it was 8.7.

One hundred and seventy new cases of influenza and 21 deaths, and 7 deaths from lobar pneumonia, were reported in Boston on January 13. On January 14, new cases of influenza numbered 173, with 19 deaths, and 6 deaths from lobar pneumonia. To the State Department of Health, 1,161 new cases and 46 deaths were reported.

On January 15, 182 new cases of influenza and 23 deaths, with 25 new cases of lobar pneumonia and 4 deaths, were reported to the Boston Health Department. Reports from 61 cities and towns include 861 cases of influenza and 31 deaths. New Bedford reported 9 deaths; Cohasset, 2; Springfield, 1. Other reports include:

Worcester, 58 (several days); Brockton, 44 (two days); Somerville, 44; Haverhill, 35; Beverly, 34; Fall River, 25; Newton, 24; Weymouth, 23 (two days); Lawrence, 23; Lowell, 22; Cambridge, 21; Winchester, 21 (five days); and Springfield, 20.

The total number of new cases reported to the State Department was 861, 300 less than the number reported for the 24 hours preceding.

On January 16, 150 new cases of influenza and 1 of lobar pneumonia, with 26 deaths from influenza and 6 from pneumonia, were reported

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—On January 10, 23 deaths from influenza

to the Boston Health Department. Commissioner Woodward of Boston is reported to have said that "while the daily fluctuations in reported cases of influenza are not sufficiently pronounced to indicate an abrupt cessation of the epidemic, it is evidence that the prevalence of the disease has been steadily declining for the past two weeks. As death may not occur until patients have been sick a week or more, it is not surprising that deaths have not yet shown a reduction proportionate to the decrease in reported new cases. Furthermore, it is to be remembered that we are entering a season of the year when deaths from respiratory diseases in Boston always increase."

The following reports were received from various cities and towns:

Fall River, 19; Brockton, 28; Cambridge, 29; Milton, 14 (in three days); North Attleboro, 35 (two days); Quincy, 27; Everett, 19; Haverhill, 26; Lynn, 21; Acton, 11; Arlington, 11; Concord, 56 (in seven days); Lawrence, 18; Lexington, 11; Lowell, 28; Waltham, 59 (two days); Newton, 10; Worcester, 39; Clinton, 12 (three days); Fitchburg, 33 (five days); Leominster, 28; Springfield, 5.

No cases of influenza were reported to the Northeastern Department, either among officers or men.

On January 17, 191 new cases of influenza and 14 of lobar pneumonia were reported to the Boston Health Department. There were 10 deaths from lobar pneumonia.

The State Department reported 785 cases and 25 deaths from 57 cities and towns. Cities reporting more than 25 new cases were: Fall River, 27 cases and 2 deaths; New Bedford, 41 cases and 1 death, in two days; Cambridge, 28 cases; Malden, 39 cases; Lowell, 31 cases, and Worcester, 29 cases.

On January 18, 175 new influenza cases, with 14 deaths, and 5 new cases of lobar pneumonia and 9 deaths from this cause, were reported to the Health Department of Boston. Despite the increase shown in these figures, Dr. Woodward is reported to have stated that the pneumonia record for the current week, 42, is way below that of the corresponding week, last year, 61.

During the week ending January 18, there were reported 1,127 new influenza cases, against 1,635 during the previous week; and there were 130 deaths from influenza reported, against 190 the week before.

The number of deaths reported on January

18 to the State Department numbered 14, and the number of new cases of influenza, 835. Among the new cases were: Worcester, 41; Somerville, 38; Malden, 37; Newton, 29 (two days); Barre, 26 (two days); Cambridge, 26; Fall River, 24; Chelsea, 21; and Scituate, 19.

There were 87 influenza cases, with 12 deaths, and 6 new cases of lobar pneumonia and 4 deaths, reported to the Boston Health Department on January 19. On January 20, 112 new cases of influenza, with 17 deaths, and 5 cases of pneumonia, with 4 deaths, were reported.

Reports made to the State Department of Health on the influenza epidemic show a continued decrease throughout the State, with but one exception, the City of Lowell, which shows a large increase in new cases. The following reports have been submitted from different cities and towns:

Lowell, 52; Worcester, 38; New Bedford, 34; Quincy, 29; Somerville, 28; Fall River, 25; Cambridge, 23; Brookline, 22; Waltham, 22 (two days); and Lawrence, 15.

INFLUENZA AT WOMEN'S REFORMATORY, SHERBORN—At the Women's Reformatory in Sherborn so many inmates are ill with influenza or pneumonia that physicians and nurses from Boston, Worcester, and other places have been called to help attend the patients. There have been eight deaths. As a precautionary measure, the women who have escaped the disease have been given increased yard liberty. There are 400 inmates in the institution.

CAMPAIGN OF THE DISTRICT NURSING ASSOCIATION—The Hyde Park division of the District Nursing Association is conducting a campaign to raise \$12,000, in order to pay the debt contracted during the recent epidemic. During the past year, 24,795 local visits have been made by the Association.

MAJOR ALLAN S. KIRKWOOD—Major Allan S. Kirkwood, Medical Corps, of Newton Center, has been assigned as chief of the Medical Service at United States Army General Hospital No. 31, Carlisle, Pa.

NOMINATION OF DR. BALMER—Dr. Edward Balmer of Northbridge has been nominated medical examiner of the 7th Worcester District, to succeed Dr. William L. Johnson, who has resigned.

In Massachusetts the problem is partly solved through the Central New England Sanatorium at Rutland. This is the second best place in the East as a health centre and is not surpassed by any other state in capacity for treatment. It is believed that after the new buildings at Rutland are completed, Massachusetts will face its tuberculosis reconstruction problem with an equipment equal to that of any state in the Union.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE.—The annual conference of the Massachusetts Society for Mental Hygiene was held in Boston on January 16. At the afternoon session, Hon. Frederick P. Cabot presided. The following addresses, dealing with mental hygiene, war, and education, were delivered: 1. "The Need and Opportunity for Mental Hygiene as Shown by the War," by Major Frankwood E. Williams, Medical Corps, U. S. A.; 2. "The Need for Instruction in Mental Hygiene in Medical, Law, and Theological Schools," by H. Douglas Singer, M.D., Illinois State Psychopathic Institute; 3. "The Smith College Experiment in Training for Psychiatric Social Work," by W. A. Neilson, LL.D., president of Smith College.

Professor William H. Burnham presided at the evening session, when mental hygiene and the education of the young was considered in the following addresses:

1. "Methods of Developing Mental Hygiene in the Public Schools," by Arnold Gesell, M.D., Yale University.
2. "Facts of Mental Hygiene that Teachers Ought to Know," by Walter F. Dearborn, M.D., Harvard University.
3. "Nervous Children and Their Training," by C. Macfie Campbell, M.D., Johns Hopkins University.

The Massachusetts Medical Society.

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Correspondence.

QUARANTINE OF RETURNING TROOPS.

483 Beacon Street, Boston, Jan. 16, 1919.

Mr. Editor:—

Since it is an established fact that the first outbreaks of the so-called influenza epidemic occurred among the naval forces, and since the reappearance of this epidemic was observed with each incoming transport of returning soldiers, it is a puzzle to me why the health authorities and the other "powers that be" do not quarantine all returning sailors and soldiers and thus employ the most effective means in checking the epidemic at its source of origin.

Yours truly,

M. J. KONIKOW.

RECENT DEATHS.

DR. CHAUNCEY M. MARSTIN died recently at his home in Braintree.

DR. WILLIAM B. VAN LENNEP, dean of Hahnemann Medical College, in Philadelphia, died there recently after an illness of two months. Dr. Van Lennep was sixty-five years old.

MAJOR ROBERT L. HULL, U.S.A., died recently in San Francisco, Cal., at the age of forty-three. Dr. Hull was a graduate of Bowdoin College in the Class of 1897. At one time he was city physician of Portland, Me., his native city, and for nine years before his entrance into army service last June, he had practised surgery in Oklahoma City.

DR. HARRY P. CORLISS died on November 16, of pneumonia, at Ray, Arizona, at the age of thirty-two years. Dr. Corliss was formerly an industrial fellow in the Mellon Institute of Industrial Research.

DR. FRANK AMON died of pneumonia at Souilly, France, on October 12. Dr. Amon was a research fellow in the Mellon Institute. In 1917 he enlisted in the United States Gas Defense work.

DR. REGINALD PERCY COCKIN, assistant helminthologist of the London School of Tropical Medicine, died on December 9, in his fortieth year.

DR. GUSTAVE BOUCHARDAT, Professeur Agrégé in the Paris medical faculty and honorary professor in the school of pharmacy, died recently, at the age of fifty-four years. Dr. Bouchardat has been a member of the Académie de Médecine, section of physical and medical chemistry, since 1882.

DR. ALBERT A. MACKEEN was killed in an automobile accident on January 18. Dr. MacKeen was born in Nova Scotia sixty-five years ago. He graduated from Bellevue Hospital and practised medicine in Whitman for nearly forty years. He was a member of the Massachusetts, Plymouth County and the Hapherly medical societies.

LT. PAUL CARROLL DENNETT of the Medical Corps, died in France on October 16. Dr. Dennett received his commission in January, 1918. In June, he was called to active service and was stationed at Camp Hancock, Ga., and later at Fort Screven, Ga., where he was attached to the 75th C. A. C. as battalion surgeon. He sailed for France on October 4 and became ill with influenza during the voyage. On his arrival in France he was removed to Base Hospital No. 65, near Brest, where he died.

DR. THOMAS F. HARRINGTON, Deputy Health Commissioner, died recently of ptomaine poisoning at his home in Boston. At one time Dr. Harrington was director of school hygiene in the Boston schools.

DR. JOHN W. SAWYER died at his home in Dexter, Maine, on January 22. Dr. Sawyer was born in Monmouth. At one time he was medical examiner for Penobscot County.

DR. JOHN H. LOWMAN of Cleveland, who headed the first American Red Cross tuberculosis mission to Italy, died at the New York Hospital, on January 23. He became ill in Italy and returned to America on a steamship which arrived in New York a few days before his death.

DR. CLARENCE JOHN BLAKE died at his home in Boston, January 29, aged 75 years. He had been a member of the Massachusetts Medical Society since 1868. He never held office in the Society.

DR. WAITE GREENOUGH CHASE died at his home in Boston, January 27, aged 59 years. He was a graduate of Harvard College in the class of 1882, and of Harvard Medical School in 1901. He is survived by his widow, who was Fannie Scott Hubbard of Charleston, S. C., and by a son and a daughter.

The Boston Medical and Surgical Journal

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ALVEOLITIS DENTALIS. INTERSTITIAL GINGIVITIS, SO-CALLED PYORRHEA ALVEOLARIS, LOCALIZED CATARRHAL STOMATITIS. SUGGESTIONS AS TO ITS CAUSE AND ITS TREATMENT.*

BY JOHN J. McNULTY, M.D., NEW YORK, N. Y.

ALVEOLITIS dentalis—interstitial gingivitis—is an error of metabolism focusing its expression in and about the alveolus dentalis. Being basically a nutritional disease its treatment should be systemic, supported coöperatively with necessary and proper surgical technique—thorough instrumentation.

Alveolitis dentalis—interstitial gingivitis—is, in the light of present knowledge, due to the same cause that induces irritation, inflammation and suppuration in other tissues of the animal organism. The cause is now believed to be lowering of "concentration and velocity of reaction" of the body auto-protective mechanism; that is, internal secretions and enzymes insufficiency, or hypoaaction of the pituitary, thyroid, supra-renals, gonads, and the enzyme cycle.

Nutritionally considered, there would not occur interstitial gingivitis, ultimating in a pus flow (pyorrhea) and loss of tissue, if the structural

tissues were not lowered in resistance. Physiologic tissue resistance is, in the light of present understanding, due to normal supply and normal rate of reaction of the associated activities of internal secretions and enzymes constituting the "body auto-protective mechanism."

Alveolitis dentalis—so-called "pyorrhea alveolaris"—is an error of metabolism and can be met satisfactorily only when treated as such.

"All the protective substances which are involved in the cure of disease are to be regarded as produced by the internal secretions."—*Sir Almroth E. Wright.*

"The loss of the internal secretions balance is written large in the morbid phenomena of the human body, and its restoration forms a main principle of modern therapy."—*Leonard Williams.*

Alveolitis dentalis follows the same pathologic process that occurs in other surface tissues; that is, when a certain lowered state of resistance occurs, invasive and offensive hosts find an inviting matrix in which to perform their morbid and destructive drama. The "organism of pyorrhea," "the characteristic flora" of pyorrhea, are incidents of the condition, not cause. The micro-organisms supposed to cause interstitial gingivitis, ultimating in pyorrhea, are only invasive, dominant where normal tissue resistance is sufficiently lowered—sub-normal. This

* Read before the Associated Physicians of Long Island, N. Y., Jan. 25, 1919.

lowered state, we repeat, is, in the light of present knowledge, the result or effect of lowered "concentration and velocity of reaction" of the internal secretions and enzymes constituting the "body auto-protective mechanism."

The words, "bacteria," "amoeba," "cocci," and "bacilli"—"endameba buccalis," "mouth flora," are not to be considered as cause but rather as incidents by the informed and practical physiologic therapist.

" . . . Every infectious disease is the result of a struggle between two variable factors—the pathogenic powers of the bacteria on the one hand, and the resistance of the subject on the other, each of these again modified by variations in the conditions under which the struggle takes place."—*Hans Zinsser, M.D.*, 1918.

" . . . susceptibility or resistance of the individual may be determined by variations in the physiological state or by the environmental conditions under which the two factors—invasor and invaded—are brought together."—*Zinsser*.

" . . . the animal disposes normally over a defensive mechanism of considerable efficiency."—*Zinsser*.

The service work of the physician is understandingly to coöperate with the "defensive mechanism"—with the auto-protective mechanism. The most efficient means at present at our command are properly associated internal secretions and enzymes that correct physiologic insufficiencies.

"Experiments were made in the human mouth on gums which had been neglected as well as on healthy gums. . . . His experiments tend to show that, when animals and man are healthy, the tissues resist infection; but when diseased, infection results."—*Talbot*.

"Competent bacteriologists were unable to find a micro-organism not found in pus from other infected tissues."—*Talbot*.

"While pyorrhea alveolaris literally means a discharge of pus from the alveolus, the simplest definition of its pathogenic condition commonly accepted under the term would be that it represents a diseased condition of the periodontal region due to impaired nutrition."—*Dr. Rhein*.

"The recognition of the vast importance of the secretory function of the group of glandular organs constitutes one of the finest achievements of modern experimental physiology. It more particularly includes the physiology of the

thyroid gland—the pituitary gland, the suprarenal capsules."—*L. Luciani*.

The sequence, if there be one, of alveolitis dentalis to so-called "Uric Acid Diathesis," "Rheumatism," or other blanket term to cover our ignorance, is not a sequence at all, but a concurrence—both morbid phenomena being due to the one and same cause, that is, auto-toxicosis largely due to sub-conversion of ingested food and possibly "suboxidation of waste." This sub-conversion and "suboxidation" ultimating in autotoxieosis, is only rationally met through the administration of properly associated internal secretions and enzymes—properly associated qualitatively and quantitatively.

"As a complication of the disease in its secondary stages there can be no doubt of the action of micro-organisms. But Sudduth does not feel justified in conceding to them a position of specificity."—*Talbot*.

" . . . there is no ground yet adduced for believing the disease to be specifically infectious and due to a germ of a specific nature; that in it the germ infection occurs as a consequence of existing disease, and is not the cause of the morbid condition, but one of its stages."—*Talbot*.

"What John Fitzgerald calls the gingival organs, possesses, as he remarks, in common with some other tissues of the body, the power of electing and excreting poisonous substances from the blood. Some of these cause hyperemia, or even inflammation, in their passage."—*Talbot*

Dr. Robin Adair writes: " . . . , there are no systemic reasons for the cause of pyorrhea other than those which may predispose to any disease." It is just this "cause," that "predisposes" that causes "pyorrhea"—alveolitis dentalis. Alveolitis dentalis is periodontal irritation, inflammation, and possible suppuration due to tissue enfeeblement resulting from an insufficient reaction of internal secretions and enzymes. A tissue bathed with toxic influences—circulating blood surcharged with toxic radicals—is the cause, the systemic cause, and the logical and helpful treatment is the administration of properly associated internal secretions and enzymes.

Diet is an essential factor in the treatment of alveolitis dentalis; whole wheat, whole barley, oat meal should be insisted upon when cereals are eaten. Food is a tripod consisting of a

protein, a carbohydrate and a fat leg,—detach one leg of the tripod and it falls.

"Accessory food substances called by Funk, *vitamines*." "The varied rôles in the maintenance of normal nutrition and the promotion of normal growth in animals and man are rapidly being defined, so that we now have a group of diseases which are generally recognized as resulting from deficiency of one or another of these accessory substances."—Editorial, *N. Y. Med. Journal*, Jan. 13, 1917.

"The study of the *vitamines* is proceeding apace and our knowledge on the subject is forming into definite shape. According to Dr. Marion D. Hise, who wrote concerning the effect of *vitamines* on body growth, the deficiency diseases owing presumably to the absence or to the lack of *vitamines* in the diet."—Editorial *N. Y. Med. Journal*, Sept. 16, 1916.

Cereal food, whole cereal food, is rich in what are now termed *vitamines* and saline nutrients—nutrient salts. These *vitamines* and nutrient salts are not only necessary as food, *per se*, but as catalysts to the process of food analysis, synthesis, and utilization.

Saline balance is essential to body well-being—physiologic equilibrium; and a disturbance in the salt balance may be an important contributing causative factor in the nutritional error called interstitial gingivitis. We are in the habit of thinking and speaking of calcium deficiency or calcium disbalance, but it is probable that other resident salts, particularly potassium salts, have much to do with physiologic equilibrium—the rôle of the potassium salts is to aid in the oxidation and elimination of protein toxic radicals and waste.

Whole cereals are rich in available nutrient salts.

It is our opinion that available salts—nutrient salts in a condition for physiologic appropriation—are made available only through physiologic analysis and synthesis;—that the administration of these salts from without, as inorganic salts, are not subject to appropriation—assimilation. The administration of calcium salts does not effect the quantitative utilization of calcium except to the extent that they, as catalysts, activate or aid organic synthesis of available nutrient calcium. Therefore, calcium, or any of the proximate salts essential to body well-being should be supplied through proper food

Surgical technique or instrumentation is an important and essential part of the treatment of alveolitis dentalis. This technical instrumentation is solely the province of the properly equipped and efficient dentist. However, in the treatment of this error of metabolism, there is no separating line between the physician and dentist, as its successful management depends on the efficient coöperation of both physician and dentist.

SUMMARY.

Alveolitis dentalis, "*pyorrhea alveolaris*," being the result of internal secretions and enzymes insufficiency, the scientific, logical and effective treatment is the administration of properly associated internal secretions and enzymes.

To aid nature more completely to digest (hydrolyze and convert) the intaken food into available nutriment, properly associated digestive ferments should be given with the food.

TYPES OF TUBO-OVARIAN SUPPURATION AND THEIR TREATMENT.*

By ROBERT M. GREEN, M.D., BOSTON.

[From the Gynecological Clinic of the Boston City Hospital.]

It may seem that the treatment of tubo-ovarian suppuration is sufficiently classic to deserve no further discussion. From personal observation, however, especially of some recent cases, I have been led to believe that suppurative disease of the tubes and ovaries may conveniently be divided into a series of clinical types, in accordance with which the treatment is most easily determined. It is with the differentiation, description and illustration of these types, and their therapeutic surgical classification, that this paper is concerned.

The most elaborate recent classification of tubo-ovarian infections is that of Forgue and Massabau.¹ This seems, however, unnecessarily complex, and in practice I have endeavored to simplify it. Perhaps the most comprehensive brief consideration of pelvic inflammation is that presented by Loekhart² before the Canadian Medical Association in 1914. From his opinion with regard to the desirability of the surgical drainage of pelvic suppuration from below, however, I feel obliged to dissent.

Infections of the Fallopian tubes and ovaries may best be grouped according to the causative agents, of which the commonest three are the gonococcus, the streptococcus, and the tubercle bacillus. Infections with the tubercle

* Read before the Newton Medical Club on May 14, 1917.

bacillus occur usually in young multiparae, single or married. They are not primary, but are secondary to some focus, often small, obscure, or undetected, elsewhere in the body; are generally bilateral; produce a relatively large amount of pain and tenderness in proportion to the extent of inflammatory process; are associated with low white count and hectic fever; and as a rule do not suppurate, but terminate either by cicatrization with diffuse adhesions, or by miliary, peritoneal and general extension and death. With these rarely suppurative tuberculous infections of the tubes and ovaries, therefore, there is little occasion for this paper to deal further. That suppuration of tuberculous tubo-ovarian infections may occur, however, and may lead to important complications of diagnosis and to serious or fatal results, is evidenced by the following case:

CASE 1. M. R., a single girl of 17, entered the Boston City Hospital (Gyn. 356341) on February 21, 1917, complaining of sharp attacks of pain in the right lower abdominal quadrant for the past three weeks. Her former health had been always good. Her catamenia, previously regular since their onset five years before, were then two weeks overdue. Her temperature was normal, her white count 8,800. Her lungs were clear, her physical examination normal except for the pelvis. The vulvar introitus was stretched so as easily to admit two fingers; the hymen had been ruptured: the cervix was intact but soft; the uterus was of normal size and adherent to a tender, doughy mass, the size of an orange, occupying the right vault; the left appendages were thickened and tender; there was no flowing. The case was kept under observation for a week, during which the temperature and white count remained normal, and the patient continued to have intermittent attacks of pelvic pain. In view of the absence of pyrexia and leucocytosis, the presumptive evidence of coitus, the amenorrhea, and the paroxysms of pain, a diagnosis was made of ectopic pregnancy near the distal end of the right tube (accounting for the non-enlargement of the uterus and the absence of irregular flow), with tubal abortion and the formation of a pelvic hematocoele. Laparotomy was advised and accepted.

At operation, on February 28, 1917, bilateral tuberculous tubo-ovarian masses were found, densely adherent and suppurating. Both tubes and both ovaries were removed with difficulty, and in the process a considerable amount of cheesy, tuberculous pus was spilled into the pelvic cavity. The appendix, involved in the right mass, was also removed, the uterus suspended, and the abdominal incision closed in layers about a single cigarette wick placed into the posterior cul-de-sac. From that time the patient ran a constant hectic fever from 100° to 102°. The abdominal wound broke down, was extremely tender, and discharged profusely. On March 23 a secondary abscess was opened in the right groin, and this sinus soon established a deep connection with the median wound. Both wounds became secondarily infected with bacillus pyocyaneus, but under daily irrigation with weak iodine solution and later with chlorinated soda, they gradually cleared up and became cleanly granulating. On April 25 the temperature became normal and the patient began to sit up. Ten days

later she developed a general miliary tuberculosis, and in a fortnight she died.

Tubo-ovarian infections with the streptococcus almost always originate at the time of abortion or labor. They are often unilateral; produce a diffuse, extensive cellulitis of the peri-tubal, peri-ovarian, and peri-metrial tissues; are associated with high white count and pyrexia, and frequently with repeated chills; and tend to terminate either by suppuration, by resolution without permanent damage to the tube, or by generalized extension and death.

Gonorrheal genital infections in adults are venereal in origin. They generally involve the tubes, often the left first, ultimately both as a rule; produce clubbing and occlusion or stenosis of the tube; are associated with moderate white count and irregular pyrexia; and tend to terminate by suppuration, after a long period of recurrent inflammatory exacerbations, by recovery with permanent functional damage of the tube, and multiple pelvic adhesions.

Whether gonorrheal or streptococcal in origin, tubo-ovarian suppuration leads either to the accumulation of pus in the lumen of the tube, whence it may drain constantly or periodically through the uterus, or to the formation in the surrounding cellular tissues of a true pelvic abscess, walled-off above by intestinal adhesions, which has a tendency to point in one of several directions. When drainage through the uterus is periodic, the periods of accumulation are marked by attacks of severe pain, the well-known tubal colic. When there is no natural drainage, and pus accumulates in the tube or in a true abscess, the clinical surgical problem resolves itself into the question whether the pus-mass can be reached only trans-peritoneally or whether it is accessible by some other route.

It is commonly considered that the chief or only path by which pelvic pus from tubo-ovarian suppuration seeks to escape is through the posterior vaginal cul-de-sac or pouch of Douglas; and indeed this is its most frequent course. Not infrequently, however, deep pus either in or around the tube may be reached surgically by this route before definite fluctuation is obtained. In my experience the most useful early indications of the presence of such pus are:

- (1) Persistent high temperature and white count in spite of the usually successful palliative measures of ice, elevation, and catharsis.
- (2) Increasingly acute tenderness in the mass of exudate behind the uterus.
- (3) Edema of the recto-vaginal wall.
- (4) Ballooning of the rectum.

When any three of these signs are present, I believe it is often wiser to go in search of pus and establish drainage through the posterior cul-de-sac, without waiting for positive fluctuation, than by such delay to allow the patient to suffer from protracted toxic absorption. In pur-

suance of the latter policy I have seen the golden opportunity for such drainage lost, the pus once accessible from below cease to be so, and the inflammatory process, unable to establish its downward exit, extend upward into an iliac and pylophlebitis terminating in death.

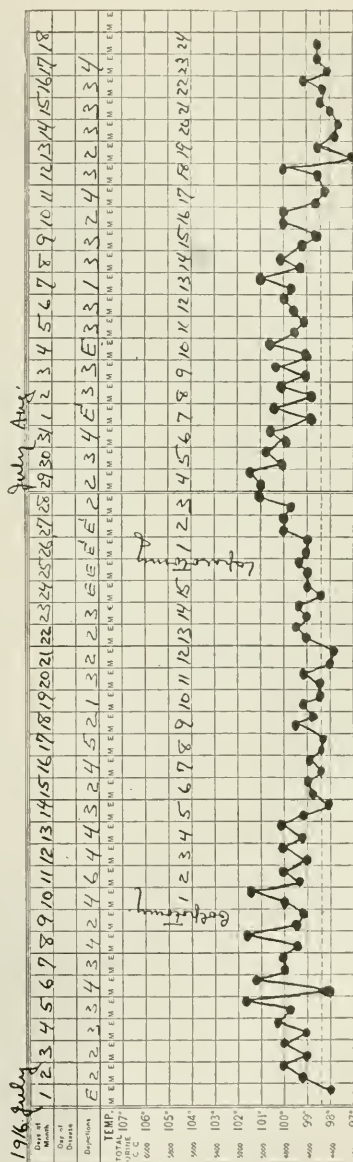
The risk of posterior colpotomy is small, its disadvantage in the formation of subsequent adhesions is negligible in face of the immediate and beneficial relief obtained from toxemia and pyrexia. After drainage of the abscess or tube, the inflammatory process generally subsides sufficiently to permit subsequent safe laparotomy, or may even recover without sufficient residua to demand further surgical intervention. Occasionally the offending tube and ovary may prolapse into the abscess cavity and can be removed from below. Whatever the subsequent procedure, early posterior colpotomy, upon warrantable conviction of the presence of accessible tubo-ovarian pus, generally minimizes the disease danger, often shortens convalescence, and occasionally makes further surgery unnecessary.

The following is an illustrative case of this type of tubo-ovarian suppuration as treated by this method:

CASE 2. R. A. G., an unmarried girl of 20, without obstetric history, entered the Boston City Hospital (Gyn. 256-25) on July 1, 1916, with complaint of pain in the right lower abdominal quadrant of six days' duration. Vaginal examination showed acute tenderness and resistance in the right vault, and an elongated, sausage-shaped mass in the left. The patient had a white count rising from 7,800 to 12,000, and ran a fever shown in the accompanying chart. A smear from the vaginal discharge showed the presence of gonococci. Under observation and palliative treatment, the tenderness in the right and posterior vaults increased, and a zone of brawny edema began to extend down the recto-vaginal septum. The rectum was ballooned. On July 9, a posterior colpotomy incision yielded a considerable amount of pus. There was marked relief of symptoms of gradual deferescence. After a fortnight of normal temperature, when the vaginal sinus was practically closed, laparotomy was done for the resection of both tubes, since it was felt and found that they were so far damaged as to be not only useless but a source of future probable recrudescence attacks. The distal half of each tube was removed, the normal-sized patulous proximal half being left patent. The ovaries were but little involved in the inflammatory process and were left intact. The appendix was removed and the uterus suspended. The patient made a normal convalescence and was discharged well on August 18.

Merely because tubo-ovarian suppuration usually points to the posterior cul-de-sac, however, should be no reason or excuse for overlooking or disregarding the other avenues by which it may seek to escape. The pelvic abscess which accumulates in the pouch of Douglas may equally well point or be evacuated through the rectum as through the vagina. Where the for-

mer route is that naturally sought by the accumulating pus, brawny induration in the pos-



CASE II.

terior cul-de-sac may persist, while fluctuation becomes easily demonstrable by rectum. For this reason, rectal or combined examination with the fore and middle fingers should never be

omitted; since even in cases where rectal fluctuation has not yet appeared, the experienced finger can detect whether deep-seated pus can be more readily reached in front or behind the recto-vaginal septum. The following case is illustrative of conditions of this type.

CASE 3. A. T., a married woman of 26, three months advanced in her first pregnancy, entered the Boston City Hospital (Gyn. 262-82) on September 19, 1916, with complaint of pain in the lower abdomen of a week's duration. Examination showed the uterus imbedded in a mass of tender

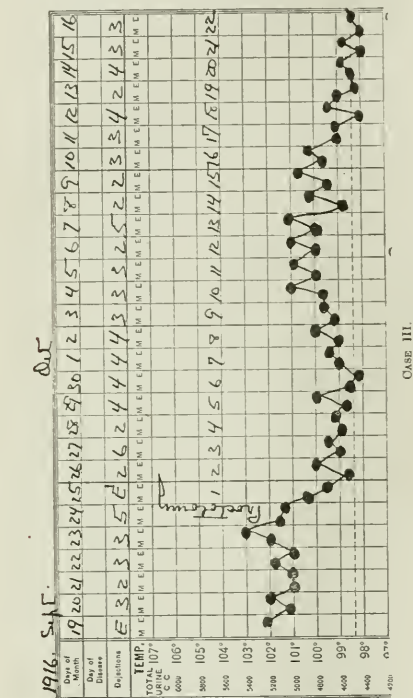
and positive treatment the inflammatory process terminated by resolution; the uterus became free and rose into good position; and the patient was discharged still pregnant on October 19, 1916.

The chief objection against rectal drainage has been the risk of secondary colon infection of the abscess cavity thus opened. Inasmuch as there must be dense intestinal adhesions roofing over such a cavity, it does not appear that this is a serious or deterrent objection to the employment of this mode of drainage, which has the further advantage of avoiding unpleasant discharge for the patient and of minimizing subsequent adhesions to the vaginal vault. Indeed whenever nature shows an impending predilection for the rectal route of drainage, it seems advisable that this channel should receive surgical preference and option.*

A third route by which tubo-ovarian suppuration may seek spontaneously to point is through the inguinal canal. Naturally this occurs when the inflammatory mass, instead of prolapsing and becoming adherent in the pouch of Douglas, adheres antero-laterally to the abdominal wall. Under such circumstances the pelvic induration and tenderness are replaced by pain and deep swelling in the groin, extending toward the flank. The phenomena in such a case are illustrated by the following histories:

CASE 4. M. P., an Armenian tertigravida of 21, entered the Boston City Hospital (Gyn. 251-1) on May 1, 1916, and was delivered the same day of a 7-months' baby, which died an hour later. The patient had a septic convalescence, with general pelvic cellulitis centering about the right appendages. On June 2 the dense, indurated mass of exudate behind the uterus was aspirated with a trocar, but no pus obtained. Three days later definite induration with deep fluctuation developed along the line of the right inguinal canal. Under ether a dissection of the canal was made, as in the operation for hernia. On retracting the lower border of the internal oblique muscle, an abscess cavity pointing through the internal ring and connected with the right appendages was opened with evacuation of several ounces of pus. The patient's symptoms rapidly ameliorated, and three weeks later she was discharged with a sluggishly healing sinus in the groin, and a pelvis clear except for slight residual adhesions and thickening in the posterior vault.

CASE 5. R. D., 24 years of age, and five years married, had one instrumental and one normal delivery at term; and a miscarriage at seven months, six weeks before her entrance to the Boston City Hospital (Gyn. 255-201) on June 26, 1916. She was said to have had fever and pelvic pain continuously since the twelfth day of this latest puerperium; and on admission had a temperature of 103°, and a white count of 25,000. Her uterus was involved in a mass of tender plastic exudate extending into the right vault; and in the left vault was a palpable indurated mass, the size of a lemon. This diffuse pelvic cellulitis, presumably originating from infection at the time of her miscarriage, or from the flaring up of a pre-existent



CASE III.

resistant exudate filling the entire posterior portion of the pelvis. The patient had a white count of from 12,000 to 14,000 and ran a fever shown in the accompanying chart, which, under palliative treatment, failed to decline. Meantime the tenderness in the posterior vault increased, but board-like induration persisted. Rectally, however, on September 24, it was determined that the bulging mass impinged more extensively and seemed slightly softer on the bowel side. Incision and blunt dissection into this mass opened an abscess cavity containing several ounces of pus, with immediate relief of pyrexia and subjective symptoms. After a period of nearly normal temperature, during which there was free rectal drainage, the patient's fever returned in slight degree. Examination, however, showed the mass of exudate much diminished in size and in tenderness. Under continued deple-

* See footnote, page 183.

inflammation at that time, was treated by the usual methods of elevation, applications of ice to the lower abdomen, and depletive saline catharsis. Under these palliative measures, the exudate in the right vault resolved, leaving the uterus freely movable. The temperature, however, continued irregular, rising often as high as 104° , and the white count rose to 27,200 and 31,200. Simultaneously the mass in the left pelvic vault became anteriorly adherent, with tenderness and induration extending into the left flank. There was no vaginal bulging or fluctuation. On July 23, 1916, under ether, a high inguinal incision was made in the left lower abdominal quadrant, and a dissection of the inguinal canal carefully carried down to the transversalis fascia. On breaking through this fascia an abscess cavity was entered, from which eight ounces of greenish pus were evacuated, and which was drained by a cigarette wick. Pathological report of a culture from this pus showed the presence of streptococcus and staphylococcus. The patient made a slow but uneventful convalescence with complete defervescence in three weeks, and on September 1 was discharged with a pelvis nearly free from exudate, slight thickening high in the left vaginal vault, and a small sinus in the left groin at the site of the operative wound.

A rare fourth type, which may be regarded as a variety of the third, is that in which the suppuration points through the linea alba, usually in the mid-hypogastrum. In this case a shirt-stud sort of abscess may be formed, the pus spreading out in two layers, above and below the fascia, with a small channel of communication between. The following case illustrates this type:

CASE 6 D. P., an Irish multipara of 40, who had had eight full-term labors and three miscarriages in 14 years, entered the Boston City Hospital (Gyn. 187-61) on Dec. 28, 1912, with complaint of pain in the lower abdomen. Her temperature was 100° , her white count 25,600. Physical examination was normal, except for the presence of tender induration in the median hypogastric region. By vagina this area was felt to be continuous with a tender mass, size of an orange, occupying the left vault. After several days of observation, with persistent fever under palliative treatment, deep fluctuation was felt in the hypogastrum; and a median incision opened a shirt-stud cavity, communicating with a left tubo-ovarian abscess containing 8 oz. of pus.

The patient's temperature fell almost immediately to normal and after a few days of fairly profuse drainage the abscess cavity closed by granulation and the patient was discharged symptomatically well on the 23rd day with a residual non-tender mass of exudate in the left vault.

CONCLUSIONS.

In conclusion it may be said, by way of summary of the personal opinions here illustrated, that

(1) Tubo-ovarian suppurations may be classified into definite clinical types, of which five have been illustrated, according to the infecting organism and the route of natural escape pursued by the accumulating pus.

(2) Treatment should be determined in accordance with the type of case, palliative depletion being always first employed.

(3) When such palliation fails within a few days to effect relief of symptoms and subsidence of fever, deep suppuration should be suspected, even in the absence of fluctuation; and, with reasonable assurance of its presence, should be explored through the appropriate route.

(4) The likelihood of rectal* or inguinal pointing should not be overlooked, when the more customary vaginal pointing fails to occur.

(5) Rectal or combined recto-vaginal examination is of value in determining by which route a given pus localization in the posterior pelvis may best be approached.

REFERENCES.

- ¹ Forgue and Massabian: *Gynecologie*, Vol. xxiv, in Denter and Delbet's *Nouveau Traité de Chirurgie*, Paris, 1916, p. 679.
- ² Lockhart: *Jour. Obst. and Gyn.*, xxvi, 144, September, 1914.
- ³ Reder: *Am. Jour. Obst.*, Vol. lxxiv, p. 935.

* Since this was written, Reder³ has discussed the same subject in a paper on "Drainage for Pus Conditions in the Pelvis during Pregnancy," emphasizing the value of the rectal route of approach. Under these conditions he employs rubber tube drainage, which I have not believed necessary and have feared might favor ascending colon infection. It is my custom to drain colpotomy incisions for a few days with a gauze wick to prevent premature closure. Proctotomy incisions, in my experience, do not require any wick or tube to ensure adequate drainage.

AN EXTENSION FRACTURE FRAME.

BY ALBERT S. HYMAN, A.B., M.D., BOSTON,

House Surgeon, Boston City Hospital.

THE general use and the wide-spread popularity of the frame devised by Dr. Edward H. Bradford have clearly shown that this type of apparatus is apparently the best for the transportation and care of patients whose condition prevents any change in the position of the body or its parts.

The Bradford frame has thus become almost indispensable in the treatment of fractures of the femur, pelvis, and spine. Of the three, fractures of the femur are undoubtedly the most common, and it is for the treatment of fractured femurs that the following modification of the Bradford frame has been devised and used successfully at the Boston City Hospital.

The simplicity of the apparatus is perhaps the chief reason for its description here. It permits a complicated and awkward apparatus to resolve itself into a modification of the Bradford frame without sacrificing the advantages of the latter. The apparatus has been designed primarily for fractures of the femur requiring extension or traction.

In most hospitals such an apparatus consists of a Bradford frame, possibly a T-splint that is connected to the latter, and a Buck's extension which is fastened to the foot of the bed, with its rope, pulley, and weights. It requires no little

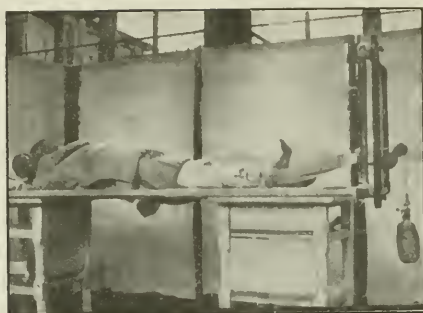


FIG. 1.



FIG. 2.

time to set the fracture up in this equipment. Its purpose is, of course, to secure the best alignment of the fragments of the fractured femur.

The patient is placed upon a Bradford frame in order that he may be raised from the bed to be bathed or to use the bed-pan, but in this very act of raising the frame, the alignment which has been secured by the extension now is destroyed. This occurs again every time that the bed is made, and in short, any condition which changes the relative position of the frame and the Buck's extension at the foot of the bed will change the position of the fractured ends of the bone and will cause delay or poor union.

In hospitals, it is often desirable to obtain x-ray pictures of fractured femurs in apparatus. To do this successfully the entire bed must be transported to the x-ray department, which in most cases is impossible. The alternative is to remove the extension and carry the patient on the Bradford to the x-ray department. A picture is then taken without the extension; or in rare cases futile attempts at traction are made with one hand while the operator or assistant takes the exposure with the other. Obviously, pictures taken in this way are of little value, since they do not tell the story that one wishes to know, *i.e.*, how the fracture looks when it is in its proper apparatus.

In attempting to overcome these faults of the Buck's extension apparatus as it is usually employed, we have devised a simple modification of the Bradford frame. As the photographs indicate, the modification consists of an upright frame attached to the bottom of the Bradford. To this upright is connected a sliding bar which supports an adjustable pulley carriage.

The frame is built essentially like a Bradford

of $\frac{7}{8}$ " galvanized iron pipe, 6 feet long and 2 feet wide. The bottom has two 3-way elbow joints which support the uprights. The latter are 18" high and are connected above by a transverse bar.

The sliding bar moves laterally, and is made of oak, measuring 20" x 4" x $1\frac{1}{4}$ ". It contains a 16" x $\frac{1}{2}$ " slot in which slides a pulley carriage adjustable at any height by a set screw. The sliding bar is fastened to the top and bottom of the upright with an adjustable brace. By this arrangement any point of traction can be secured within an area measuring 20" x 16".

With the extension apparatus thus applied directly to the Bradford frame, it becomes possible to move the patient in bed from place to place without the slightest possible change in the position of the fragments of the fractured bone. Good x-ray pictures can then be taken.

There are other lesser advantages in this apparatus. It does away with the "hood" that is used to protect the feet of the patient from the weight of the bed clothes—the upright itself acts as a hood upon which the sheets can be fastened.

The apparatus can be used in the treatment of septic conditions of the leg or foot which require elevation and traction.

Counter-extension is easily obtained by placing suitable blocks under the bottom of the frame. The foot of the bed need not be raised.

In this paper we have attempted to describe a modification of the Bradford frame which, because of its simplicity, we believe will supplant the Buck's extension apparatus now in vogue. For his numerous helpful suggestions we owe many thanks to Dr. John Baptist Blake, Surgeon-in-Chief of the First Surgical Service, Boston City Hospital.

Selected Papers.

INFLUENZA.*

By GEORGE PEACOCKE, M.D., F.R.C.P.L., DUBLIN, IRE.
*Physician, Adelaide Hospital and to King George V.
Hospital Dublin.*

My first and very pleasant duty at this our opening meeting for the present session is to thank you for the honor you have conferred on me by electing me as your president for the coming year. I am deeply sensible of the honor and trust that during my term of office I shall preserve the worthy traditions handed down to me by my predecessors in the Chair.

In my work of the Academy I have taken a great interest since I was elected a Fellow, nearly 25 years ago, and on the Council of this Section I have served without a break for the past 16 years. During that time, but especially of late years, I have noticed a growing decline in the interest taken by the Fellows in the sectional meetings. Our late president, Dr. Drury, discussed this subject very fully in his inaugural address. It is, therefore, unnecessary for me to say more on the matter. I fully endorse all that he said on that occasion.

During the present session it has been decided, on the recommendation of the General Council, to hold fewer sectional meetings. In the medical section there will be only four meetings, instead of six, our usual number. I hope the meetings will be well attended, that our secretary will not find it difficult to obtain sufficient and suitable material for them, and that the discussions will be helpful and illuminating.

We are met to discuss the nature and symptoms of the great pandemic which during the past few weeks has swept over the entire world and exacted a heavy toll of sickness and death. It is, I think, generally held that the causal organism of the disease is the *Bacillus influenzae*, but many consider that some as yet undiscovered virus is responsible for the present epidemic.

When uncomplicated, influenza is not a malady that often causes death. The high mortality of the present epidemic is due almost entirely to the frequency with which cases have become secondarily infected with pneumococci

and streptococci—a striking feature of the present visitation.

The public has been unduly alarmed by the writings in the press, and something akin to a panic has resulted. The death-rate, no doubt, is a high one, but if the case mortality could be estimated it would not be found to be of very formidable dimensions.

The figures for a large hospital with which I am connected, and to which the milder cases are not admitted, are, for the month of October, 497 admissions, with 32 deaths, a percentage of 6.5. In my own private practice the rate is lower—a generous estimate would not amount to a death-rate of 2 per cent.

The symptoms presented by the disease are many and various. In the severe cases, especially those complicated by pulmonary affections, I have noticed the great frequency with which cyanosis occurs—the lividity appearing early, and persisting, often for many days, until, as is usual in these cases, a fatal termination ensues.

Laryngitis is extremely common, giving rise to considerable pain over the larynx, a distressing brassy cough and hoarseness, amounting in many cases to complete loss of voice.

Delirium, either of a low muttering type or more violent in character, is met with in many cases, and often persists for some days after the temperature has become normal. Mania, following the pyrexial period, and lasting for ten days, I have seen in one case.

The temperature chart is in many cases a fallacious guide. Some of the most severe cases I have seen have had only a moderate degree of pyrexia. A sign full of omen is a fall of temperature without any corresponding fall in the pulse and respiratory rates.

The condition of the tongue I regard as a helpful sign in prognosis. When moist, and not more than lightly furred, the case is, as a rule, progressing favorably; when thickly coated, and especially when dry, the chances of recovery are small.

Vomiting has been a distressing and sometimes alarming symptom in many cases.

Albuminuria to a slight degree is common in the acute stage: when abundant, the outlook is not favorable. Symptoms of a definite acute nephritis I have not observed. In one case, which terminated fatally, the urine contained a large amount of blood. Examination showed it was not hematuria, but hemoglobinuria.

* Reprinted from the Medical Press of Jan. 1, 1919, being the author's presidential address before the Medical Section of the Dublin Academy.

The pulmonary signs are extremely varied. Bronchitis or broncho-pneumonia is present in a large proportion of cases. Typical physical signs of a true fibrinous pneumonia are rare, even when, as is frequently the case, the sputum is rusty, and the general symptoms are those associated with the disease.

In the early stages a pulse of 80 with a temperature of 102° to 103° is not uncommon, and in favorable cases this comparatively slow pulse-rate may continue throughout the illness. A daily increasing pulse-rate is a most unfavorable sign.

During convalescence the pulse-rate becomes extremely slow. I have on more than one occasion found the rate to be only 40 per minute.

Jaundice I have seen in a few cases; it has been present in both fatal and non-fatal cases. The tendency to hemorrhages has been noted by all observers as a common complication. Epistaxis is the most frequent form, and occurs in severe and mild cases alike. Of more serious import is bleeding from the mouth and gums. One case of cerebral hemorrhage has occurred in my practice, in a young man, producing complete left-sided hemiplegia. He is now recovering. Otitis media occurs with sufficient frequency to merit recognition. It differs in no way from the affection, as it occurs in many of the infectious fevers.

Tonsillitis is not common—quinsy I have seen in a few cases.

Unilateral parotitis I saw in one man. The condition arose only a few days before death, and was associated with an acutely septic condition of the mouth.

I have not observed any case of influenzal meningitis; possibly in some of the acute cases with marked delirium I have overlooked its presence.

I have not attempted to classify the varying types of this protean disease, but there is one outstanding form which, with the dramatic suddenness that death ensues, deserves special mention. A patient suffering at the time from a typical severe attack, suddenly becomes alarmingly ill. Pain, often acute, is felt in the chest, the respirations become rapid, and breathing greatly embarrassed; a frothy bloody fluid is coughed up; delirium, rapidly passing into coma, ensues, and death may occur in a few hours after the onset of these acute symptoms. I have seen several such cases, but will refer to only one. A young woman, 24 years of age,

otherwise healthy, complained on a Wednesday night of feeling sick. Her temperature was slightly elevated. The next morning she was not so well, and fainted on getting out of bed. During the day her condition grew worse; she was removed to hospital, and when I saw her, at 7 P.M. on Thursday evening, she was dying. Râles were audible all over her chest; she was unconscious; her pulse was imperceptible, and she was coughing up fluid of the kind I have just described. She died at 10 P.M. the same evening.

As regards treatment, I have only to say I know of no specific. Salicylate of quinine is the drug I most employ as a routine. Aspirin appears to relieve the headache.

To keep the bowels free and to promote sleep are, I am sure, objects of great importance. Calomel I prefer as a purgative; trional or some preparation of opium for sleeplessness. Stimulants are required in most cases, and in some should be given freely.

The influenzal vaccine prepared in the laboratory of Trinity College I have used in some cases, but I cannot say I have noticed any particular effect from its use. Its value as a prophylactic is a burning question at the present time.

Society Report.

TREATMENT OF TUMORS OF THE UPPER JAW WITH THE CAUTERY.*

BY JOSEPH COLT BLOODGOOD, BALTIMORE, MD.

THE employment of the cautery in the partial or complete removal of malignant tumors is an old method. My own experience during the past five years has demonstrated that we have much to learn as to the details of its application.

When we compare the results of operations for the removal of tumors of the upper jaw with the knife alone with the results of the removal of identical tumors with the cautery, we find that we have distinctly decreased the mortality, and when we have accomplished cures it has been with less mutilation. Whether the actual number of cures has been increased cannot be demonstrated at the present time.

The reduction in mortality is associated with

* Abstract of paper read before the Southern Surgical Association at its 31st Annual Session, Baltimore, Dec. 18, 1912.

the employment of local anesthesia alone, or in combination with light chloroform general anesthesia.

In many instances it is safer to remove the disease involving the upper jaw in stages. It is remarkable how much can be done under local anesthesia alone. When a general anesthetic is necessary, chloroform in my experience, seems to meet the indications best. It does not interfere with the use of the cautery. It is the best anesthetic when operations are performed in the region of the oral cavity. It should never be pushed to complete narcosis. The patient has no memory of pain, and although he is so lightly under the influence of the anesthetic that all reflexes are active, he remains more or less quiet.

When chloroform is not pushed to complete narcosis the danger seems practically eliminated, and the operations can be repeated at intervals of three or four days. In some of my cases there have been as many as fourteen operations.

The surgeon should hold himself responsible for the anesthetic and direct its administration. In all of my cases the pulse and blood pressure are recorded every five or ten minutes. The chloroform is rarely administered longer than one hour. When the cautery, instead of the knife, is employed, the operation can be discontinued at any moment.

The duration of the operation and the number of operations largely depend upon the general condition of the patient and local extent of the neoplasm.

When the cautery is employed it is possible to remove the tumor piecemeal and to destroy from tumor tissue into the surrounding healthy tissue without danger of dissemination, while with the knife one must give the tumor tissue a wide margin and remove the entire mass *en bloc* at one operation.

In tumors involving the upper jaw the complete excision with the knife, when the disease is extensive, always sacrifices more healthy tissue than when the cautery is employed, and the danger of this single extensive removal with the knife is greater than the removal in stages by the cautery.

In the removal in stages with the cautery it is also possible to have a pretty positive microscopic control as an indication that enough has been done. One also learns quickly to distinguish granulation tissue in which there is no tumor tissue from that which still contains

tumor tissue by its gross appearance, which can be checked by the removal of a piece for microscopic study with the cautery.

The new growth should be attacked with the cautery from two points. One should burn the tissue at the border of the tumor. This not only destroys the infiltrating area, but excites in the healthy tissue beyond a granulation tissue which of itself is largely protective against secondary invasion, at least during the period of complete removal. The second attack should be upon the new growth itself, if possible, from the center out.

These two methods of attack are varied, according to the size of the neoplasm and its local growth, and the anatomical character of the surrounding uninvolved tissue.

I find that I am helped by a thorough knowledge of the character of the local growth and its microscopic appearance based upon a thorough study of similar cases recorded in the surgical pathological laboratory of the Johns Hopkins hospital.

Details of the method of attacking tumors of the upper jaw will be given in the completed paper with illustrations.

| American Medical Biographies.

CHOVET, ABRAHAM (1704-1790).*

Of the early life and education of Abraham Chovet nothing is known. On the back of the frame of a miniature in the possession of the Pennsylvania Hospital, Philadelphia, there is scratched, "Born May 25, 1704." Who his parents were, where he was born, and his nationality is not known. It is stated by Ruschenberger that the name "is not French, but an English patronymic; one of a class of two-syllable names ending in *et*, or *ett*, as Cobbet, Collet, Levett." Norris says he was a native of England. Chastellux gives England as his native country, and further states that "after studying medicine and surgery there, he went to France to improve himself under M. Winslow."

Some years since, the author of this sketch had an extensive correspondence with the late Sidney Young, F.S.A., past master of the Worship-

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

ful Company of Barbers of London, and author of "The Annals of the Barber Surgeons of London," in regard to Abraham Chovet; and from this correspondence and the above mentioned "Annals" the following facts were gleaned in regard to his early history and life in England.

February 5, 1734, Abraham Chovet (surgeon), who had been bound to Peter Gongoure le marque, a foreign brother of the Company of Barber-Surgeons, was examined for admittance to the Company. He passed the examination and was sworn a foreign brother of the Company. On August 6, 1734, he took up his freedom of the Company, and, after being sworn, took the livery and clothing of the Company. On August 15, 1734, he was chosen a demonstrator of anatomy.

It is to be noted that the term, "foreign," used above, does not mean a foreigner or alien in the modern acceptance of the word, but a surgeon who practised within the jurisdiction of the Company of Barber-Surgeons of London and was not "free" of the Company by patrimony, servitude, or redemption.

In one of the letters received from Sidney Young, he suggests that when Chovet, on the sixth day of August, 1734, "came into our Guild and took up his 'freedom' by redemption, and then the higher grade of the livery," he probably did so "with the knowledge that on the 15th of the same month he was to be chosen demonstrator of anatomy and it was considered desirable that such an important office should be held by a liveryman and not by a mere 'F. B.'"

At this time Chovet was 30 years of age; but from the date of his birth until February 5, 1734, nothing can be learned in regard to him. That he must have given lectures on anatomy somewhere previous to his appointment in the Company of Barber-Surgeons is shown by his having issued, in 1732, at London, "A Syllabus or Index of All the Parts that Enter the Composition of the Human Body." In this he describes models which he has made of wax, and natural and artificial preparations sufficient to give a complete course in anatomy; he also was familiar with the method of making corrosion preparations. He had the true anatomical spirit and he retained it during his entire life.

Not only was Chovet an anatomist, but it is quite probable that he was a surgeon of considerable eminence during his residence in London, for he resided in Leicester Square, at that time the fashionable locality for surgeons with a large

practice. This square was later noted as being the residence of another anatomist and surgeon, John Hunter.

In 1736, Chovet resigned his position in the Company of Barber-Surgeons; his name appears in the list of Liverymen for 1740, but not afterwards. Sidney Young, in one of his letters said, "this is presumptive evidence that he was dead before the list for the year 1741 was made up." Such, however, was not the case.

Just why Chovet resigned as demonstrator in the Company of the Barber-Surgeons and later left London is unknown. In his letter to the Company, resigning his position, he mentions "his other business." As he remained in London some four more years it may refer to his extensive surgical practice. S. Weir Mitchell relates the following: "Dr. Physick told my father that, while living in London, Chovet tried to save a too adventurous gentleman about to be hanged for highway robbery, by opening the trachea before the hangman operated. The patient was rapidly removed after the execution, and is said to have spoken. A queer tale, and doubtful, but worth the telling. The government is said to have lacked due appreciation of this valuable experiment, and Chovet brought his queer Voltairean visage to America."

Neither Sidney Young nor D'Arcy Power, F.R.C.S., to whom the author wrote asking for confirmation of the story, could find any ground for the story, and Chovet did not come direct to America; for Chastellux (*The Universal Asylum and Columbian Magazine* for 1790) and Norris state that he spent some years in the Barbadoes, and afterwards went to Jamaica.

During these wanderings Chovet did not lose his interest in anatomy. Chastellux relates that during the war of 1774 a prize was brought into Barbadoes with a large quantity of wax in the cargo. Chovet improved the opportunity and made a considerable number of anatomical models. The date of his leaving Barbadoes and of his arrival in Jamaica are not known; but in the *Gentleman's Magazine* for the month of May, 1759, under the promotions for that year, appears the following: "Abra. Chovet, Esq., surgeon of Kingston in Jamaica, a Dr. of physick." In the list of M.D.'s conferred by Oxford, Chovet's name does not appear, and there is no list of Cambridge graduates or of the M.D.'s granted by the Archbishop of Canterbury. We are, therefore, ignorant of the source of this degree. If the story related by S. Weir Mitchell

be true it seems strange that this degree should have been conferred on Chovet.

In order to escape an impending insurrection of the slaves, Chovet, with his wife and widowed daughter, fled from Jamaica and came to Philadelphia. The date of his arrival is uncertain. In his obituary notice in the *Universal Asylum and Columbian Magazine* for March, 1790, it is given as 1770; Norris gives 1774 as the date, but it seems probable that the earlier date is the correct one.

Shortly after Chovet's arrival in Philadelphia, he began giving lectures on anatomy. If the reader will turn to the files of the *Pennsylvania Journal and Weekly Advertiser*, and of the *Pennsylvania Gazette*, for the months of October and November, 1774, he will find notices of the time and place of the lectures; also a very laudatory account of his first lecture, which was attended by "his Honour the Governor, the Trustees and Faculty of the College, the Clergy, the Doctors of Physic, the Students of Medicine, and a considerable number of the most respectable inhabitants of the City." During the years 1776 and 1777 the lectures given by Chovet were the only lectures on anatomy given in Philadelphia.

In Philadelphia, Chovet lived on Water street and, until 1777, he had his museum and lectures in a building situated in Vidal's Alley. In 1777 he built an amphitheatre in connection with his house on Water street, the first lecture being given there in January, 1778. Soon after the peace of 1783 he moved to Race street, and seems to have, at the same time, given up his lectures on anatomy.

Dr. John Fothergill, of London, was exceedingly interested in the young medical school at Philadelphia and presented it with a number of anatomical models, skeletons and eighteen anatomical charts done in crayon. These were used by Professor Shippen in connection with his lectures on anatomy at the medical school; but they were inferior to those made by Chovet. John Adams, of Massachusetts, visited both collections; the one at the hospital, on Tuesday, August 30, 1774; and Chovet's, on Friday, October 14, 1774. He made no uncertain comparison, for he says of Chovet's collection, "This exhibition is more exquisite than that of Dr. Shippen at the hospital." Chastellux visited Chovet in 1780 and, after examining his preparations, said, "They appear superior to those of Bologna." Dr. George B. Wood, speaking of the

collection given by Dr. Fothergill, says, "These served as the basis of a museum, which was afterwards greatly increased by the purchase from the executors of Dr. Chovet, an eminent but somewhat eccentric physician of Philadelphia, of his collection of preparations and wax models, then deemed masterpieces of art in that department." Morton, in his "History of the Pennsylvania Hospital," says, "In 1793, the managers acquired for the museum a very remarkable collection of anatomical preparations, including dried, injected and painted specimens, together with a series of beautiful wax models by Dr. Abraham Chovet." It is a matter of regret that the entire collection of Chovet's preparations was destroyed by fire in 1888, while the inferior collection given by Fothergill was saved intact. It would seem better if the elements had left a portion of Chovet's collection; for everyone who saw it bore testimony to its excellence.

As a practitioner of medicine and surgery, Chovet was not without reputation. Norris describes him as being "a very popular physician, who came here from the West Indies." In another place he says, "Dr. Coste, the chief medical officer of Rochambeau's Army, in a tract which he published in Leyden in 1784, speaks of Chovet as a man skilled in all things pertaining to medicine, and especially in anatomy and surgery." Morton, in his sketch of Chovet says, "His character and the high quality of his professional acquirements entitled him to high rank among the medical profession, and with them to respectful remembrance."

Chovet was one of the twelve senior founders of the College of Physicians of Philadelphia and the only one of foreign birth. At this time he was over 80 years old, and the honor was all the more marked, for men of such advanced age are not asked to take part in a new enterprise unless their reputation will lend prestige.

Chovet was married previous to his leaving England; the tombstone of his daughter, Mrs. Abington, tells us she was born October 30, 1736, and died April 3, 1813.

Chovet said "that physician is an impostor who did not live till he was eighty"; he died March 24, 1790, in the eighty-sixth year of his age. In the obituary notice which was published in the *Universal Asylum and Columbian Magazine* for March, 1790, he is referred to as "an eminent anatomist and extraordinary man," who "for about half a century attracted the at-

tention of persons of all ranks and classes, in different parts of the world."

Dr. Chovet appears as one of the characters in S. Weir Mitchell's "Red City." The story opens May 23, 1792, and closes in September, 1795, covering about three years and four months. The last time Chovet appears in the story is some time in August, 1795, at which time he is represented as fleeing from Philadelphia. As Dr. Chovet died March 24, 1790, it is difficult to understand how he could be a living character in 1792, and so active in 1795, that he could "flee the city." While Chovet was eccentric, he did not deserve the ridicule which S. Weir Mitchell held him up to throughout his "historical" novel. All my investigations into the life and character of Dr. Abraham Chovet confirm the statement made by Morton in his "History of the Pennsylvania Hospital," which I again repeat: "His character and the high quality of his professional acquirements entitle him to high rank among the medical profession, and with them to respectful remembrance."

WILLIAM SNOW MILLER, M.D.

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Abraham Chovet: An early teacher of anatomy in Philadelphia. W. S. Miller, *Anatom. Record*, Vol. v.

Book Reviews.

Manual of Vital Function Testing Methods and their Interpretation. Second revised and enlarged edition. By WILFRED M. BARTON, M.D. Boston: Richard G. Badger, 1917.

The appearance of a second edition of this work within a year of its first publication would seem to prove its value. The second edition is enriched by several articles by Dr. Thomas S. Lee of Georgetown Medical College, on Sphygmobolometry, Sphygmobolography, and on Energomety. Dr. Lester Neuman, also of Georgetown Medical College, has made very valuable additions to the second edition, which are to be found in the chapters on liver and kidney function. The author has added a short description of functional tests applied to the vegetative nervous system.

The Way Out of War. By ROBERT T. MORRIS, F.A.C.S. New York: Doubleday, Page & Co. 1918.

This work is a discussion of the theory that war is caused by man's defective brain. The

author maintains that as the sociologist and psychologist have both failed in their efforts to explain the condition of warfare, it is a task for the biologist, and a case for the application of natural law rather than educational conviction. Warfare begins with organic life, with the chemical conflict between the amoeba and the microbe. In man, intellectual faculties must be looked to for guidance in the future. This book expresses the belief that warfare which kills is not a final method; for higher than physical might there is moral reasoning. From the naturalistic standpoint, gas poisons are explained as freaks in the course of the decline of a nation which has reached cultural limitation. Correlative with the destructive process in nature we find war in its relation to the human species. According to the order in nature, through the union of better and better elements, a world state will emerge; but this can not be accomplished until the philosophy of mutual interdependence is perceived and adopted. This book gives an original interpretation of war and illumines the possibilities of the future.

Acute Appendicitis: Practical Points from a Twenty-five Years' Experience. By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P. London: Harrison and Sons. 1917.

This book is a summary of various observations of the author in cases of acute appendicitis, embodying chiefly practical points in diagnosis and treatment learned through a twenty-five years' experience. The care necessary in the diagnosis of appendicitis is emphasized, and various aids to diagnosis are given. After diagnosis has been made, and operation has been decided on, general principles of pre-operative treatment, preparation of the skin, heating of the operating theatre, application of the anesthetic, are described. Clinically, the cases are divided into four groups: (1) Good, with no indication of abscess. (2) Fair, with definite signs of localized abscess. (3) Poor, with signs of spreading peritonitis. (4) Desperate, the patient being in a state of collapse. Operative treatment for each of the four classes of cases is described very clearly. Post-operative treatment and some post-operative complications are also touched upon, and a very interesting set of cases, all taken from the practice of the writer, are given to illustrate the conclusions drawn.

Catechism Series. Pathology, Part IV, Second Edition; Surgery, Part V, Third Edition. By CAPTAIN C. R. WHITTAKER, R.A.M.C., F.R.C.S. (Ed.), F.R.S.E., Edinburgh: E. and S. Livingstone. 1918.

Pathology, Part IV, is one of the handbooks of the Catechism Series, in which information

is given by means of the question and answer method. This pamphlet treats the subject of inflammation, its causes, its relation to the allied subjects of infection and fever, and describes conditions causing infection and fever. The pamphlet further treats the subjects of repair and immunity, and deals with diseases of the bronchi and lungs, including the several kinds of bronchitis, pneumonia, and tuberculosis.

Surgery, Part V, is also one of the Catechism Series, and treats such subjects as diseases of muscles, the rectum and anal canal, piles, abscesses and stricture of the rectum, tumors, various kinds of hernia, ulcer and cancer of the stomach, duodenal ulcer, acute intestinal obstruction, volvulus, cancer of the bowel, and vermiform appendix, describing the etiology and clinical features, and outlining the most efficient surgical treatment of each.

The Psychology of Special Abilities and Disabilities. By AUGUSTA F. BRONNER, Ph.D 12mo, pp. 269. Boston: Little, Brown and Company. 1917.

Dr. Bronner's book is based upon the study of a large number of cases seen at the Juvenile Psychopathic Institute, Chicago, and contains much that is of interest to educators, to those interested in mental testing, and to students of psychology. This is not properly a study of the feeble-minded, but a discussion with many instructive illustrations of those numerous cases which, for one reason or another, have failed to adapt themselves to school or social conditions; and the author throughout emphasizes the importance of differential diagnosis, especially the attempts to determine in what directions the mental defect is found. As the writer says, the psychological examination, in and of itself, is not sufficient to enable one to reach a diagnosis. This requires a much broader acquaintanceship with the problems of psychopathology than mere familiarity with tests indicates. Abnormal reactions to tests are signs that require interpretation, since they may be due to any one of a number of causes. Hence the various possibilities must be known and considered before concluding that we have a case of either general mental defect, or special mental disability.

The writer discusses instances of defects in special directions which have come under her observation, such as of memory, visual representation, and others, including a discussion of the cases of so-called congenital word deafness and word blindness, and then gives a series of illustrations of general mental defect with special abilities, discussing briefly the various educational and social problems of the cases. Particularly interesting are the cases of general mental defect, with special ability in the

direction of language facility, as these cases so often lead people astray in their judgment. The book is one which will well repay careful reading and study.

The Mastery of Nervousness. By ROBERT S. CARROLL, M.D. 12mo, pp. 346. New York: The MacMillan Company. 1917.

This book does not in the least profess to be a medical treatise on neuroses, but is written evidently for the general public. The writer takes up rather briefly in the first chapters various forms of nervousness, chiefly a clear description of the numerous ways in which nervousness and the neuroses may manifest themselves. Then follow some chapters on various factors of influence in producing the symptoms, such as heredity, faulty modes of living, and social mal-adjustments. Next follow a number of chapters with clear and helpful descriptions of the management, chiefly by the sufferers themselves, of these numerous errors, mostly along the lines of reëducation and self-adjustments, which cannot help but be of great use.

This book can be heartily recommended to the physician for helpful hints in the management of various types of nervous cases, and also to intelligent and thoughtful patients as a safe guide to self-help.

Locomotor Ataxia. By WILLIAM J. M. A. J. MALONEY, M.D. (Edin.) 8vo, pp. 299. D. Appleton and Company: New York and London. 1918.

The author of this excellent treatise on the most common of the organic diseases of the nervous system has treated his subject in an admirable way, as an example of our applied knowledge of the anatomy and physiology of the structures involved, and everywhere with especial reference to the treatment of the disease and its symptoms. As was to be expected, the author gives full weight to recent work, proving the invariable syphilitic origin of tabes.

The writer, while in general giving very fully the results of the work and investigations of others in this disease, is inclined to a somewhat pessimistic view of the benefits from intradural injections of salvarsanized blood serum in this disease. While the benefits from this treatment are still undecided in many other forms of syphilitic affection of the central nervous system, in this disease the favorable results, in many instances amounting to a complete stationary condition of the process, and often with marked relief from many of the most distressing symptoms, have been controlled by too many observations, over sufficient length of time made by trained observers for the reviewer to quite share the doubts

of the author, as to the effectiveness of this procedure. The chapters on the uses of exercises and apparatus for the ataxia in tabetics are most excellent, and should be studied with care, as these forms of treatment are too often neglected.

This little monograph can be highly commended, not only to neurologists but to other physicians, as it is reliable and useful, and makes accessible a large number of facts not easily found.

"What Men Live By." By LEO N. TOLSTOI. Boston: The Stratford Company. 1918.

"What Men Live By, and Other Stories" is the third volume of a series of "25c Universal Library," published by the Stratford Company. In this volume are included four of Tolstoi's most famous stories. "What Men Live By" is one of the most spiritually beautiful of all his stories. "The Coffee-House of Surat" and "Three Questions" express the author's religious views and his strong sense of the bond of love and service which unites mankind. "How Much Land Does a Man Need?" points a moral, concluding, through the test of economic aspirations and ventures, that "six feet from his head to his heels" is after all sufficient. This is an unusually interesting collection of some of Tolstoi's finest and most characteristic work.

Bipp Treatment of War Wounds. By RUTHERFORD MORISON. *Amputation Stumps.* By C. MARTIN HUGGINS. Oxford War Primers. London: Henry Frowde—Hodder & Stoughton.

These two War Primers are of extraordinary value to surgeons engaged in military service. They are written by men who have observed the results of the methods of treatment which they describe. As there is little published information dealing with these war conditions available, the record of these personal observations are particularly valuable. Both volumes are illustrated.

"Bipp Treatment of War Wounds" shows that with the aid of antiseptics, primary union after suture of infected, suppurating wounds is possible. The technique of the treatment and the use of Bipp—a paste preparation—is briefly and clearly summarized and clinical experiments are described. Although there is some danger of poisoning both by bismuth and iodoform in the use of Bipp, experience in several thousand cases has proved that this danger is not so serious or frequent as to weigh against the advantage of its use.

"Amputation Stumps, Their Care and After Treatment," is written by a man who has been responsible for the treatment of about 3,000

amputation cases during the past year. This book is not intended to be a text-book, but aims to show what departure from pre-war practice should be made in dealing with amputations. Ideal stump conditions, the guillotine amputation, methods of preventing sepsis, and the technique of reamputation are among the topics generally considered. Detailed descriptions are given of amputation stumps of the upper and lower limbs, treatment of painful and tender stumps, sinuses and necrosis of bone, and joint deformities.

The Medical Report of the Rice Expedition to Brazil. By W. T. COUNCILMAN, M.D., and R. A. LAMBERT, M.D. Cambridge: Harvard University Press. 1918.

"The Medical Report of the Rice Expedition to Brazil" is both valuable to the physician and student of tropical medicine and of remarkable interest to the general reader. It describes the Amazon country, its rivers and forests, the people, and health conditions. The authors found it difficult to obtain scientific and accurate information regarding diseases of the region, but local health reports and travelers furnished some information. In this volume, visits to many cities are described. The conditions found in hospitals are considered and statistical information coming from health authorities is appended. Among the most common diseases are leprosy, cancer, malaria, tuberculosis, hookworm, ulcers, anaemia, and enlarged spleens. The book is well illustrated and presents an unusually interesting picture of the Amazon region.

Studies from the Rockefeller Institute for Medical Research. Volume XXVIII. 1918.

"Studies from the Rockefeller Institute for Medical Research" is a volume composed of reprints of articles published in various journals and publications throughout the year. Among the many interesting articles of research, there are several which merit particular attention.

A study undertaken by Hideyo Noguchi and Rokusaburo Kudo of "The relation of mosquitoes and flies to the epidemiology of acute poliomyelitis" indicates that these insects should not be accepted as a factor in the epidemiology of poliomyelitis. Experiments upon monkeys with mosquitoes hatched in polluted water contaminated with the virus of poliomyelitis showed that neither these insects nor their offspring were able to infect the monkeys. An experiment with non-biting flies indicates that it is improbable that the virus of poliomyelitis is taken up by fly larvae and multiplied therein. The notion that these non-biting flies may act as intermediary hosts or a virus reservoir is not justified.

A "History and analysis of the methods of resuscitation," by S. J. Meltzer, gives a brief review of the 150 years of verifiable history of resuscitation. Until 1856, inflation was the method of procedure in artificial respiration; and special apparatus was required for its performance. In a later period, inspiration was accomplished by aspiration, which consists mainly in manual handling of the victim. The methods of Marshal Hall, Sylvester, Schäfer, and Laborde are described. The author's intratracheal pharyngeal insufflation apparatus is described and the order of procedure is discussed. This method is advisable for artificial respiration in cases of emergency, but not as a routine method for the administration of anaesthesia.

Two articles dealing with experimental surgery, on "Cicatrizization of wounds," are particularly interesting. One, by Alexis Carrel and Alice Hartmann, describes sterilization of wounds with chloramine-T. The technique for the application of the chloramine paste and its effects on aseptic and slightly infected wounds are considered. The experiments made show that chloramine paste maintains the asepsis of a wound already sterile, sterilizes an infected wound, and causes no apparent modification of the cicatrization curve of an aseptic wound. A second study, by Alexis Carrel, P. Lecomte Du Noüy, and Anne Carrel, deals with "The influence on the healing of wounds of variations in the osmotic tension of the dressing." The following conclusions were made: (1) The flushing of an aseptic granulating wound with hypertonic sodium chloride solution or distilled water brings about an immediate re-infection. (2) Distilled water and hypertonic sodium chloride solution do not modify to a measurable extent the rate of healing of an aseptic wound.

In the field of experimental biology, there are four articles of unusual interest. One, by Jaques Loeb, considers the chemical basis of regeneration and geotropism. It explains the resourcefulness of the organism in restoring its lost apex by the growth of hitherto dormant buds near the wound or by a geotropic bending of former horizontal branches by a phenomenon of mass action of nutritive and possibly some specific substances upon the cells. This process leads to a rapid synthesis and growth in these cells.

Another article by Loeb explains "The similarity of the action of salts upon the swelling of animal membranes and of powdered colloids."

The report of an investigation made by Reginald Fitz and Donald D. VanSlyke on "The relationship between reserve and acid excretion" concludes that in normal men and diabetics the excretion of acid in excess of fixed bases as measured by determining ammonia plus titratable acid bears a quantitative relationship to the alkaline reserve of the body as

measured by the CO_2 binding power of the blood plasma. Another study of acidosis, "The blood, urine, and alveolar air in diabetic acidosis," by Edgar Stillman, Donald Van Slyke, Glenn Cullen, and Reginald Fitz, presents the study of the quantitative measures of acidosis in the blood, urine, and alveolar air of diabetic patients. In charts and tables are summarized the general results of this investigation.

Clinical Disorders of the Heart Beat. By THOMAS LEWIS, M.D., F.R.S., D.Sc., F.R.C.P. Fourth Edition. New York: Paul B. Hoeber. 1918.

The purpose of this fourth edition of "Clinical Disorders of the Heart Beat" is to recount such symptoms and signs as the author has found to be serviceable in identifying cardiac disorders in his clinical observations of patients. Graphic records are confined almost entirely to such as illustrate what may be recognized by the practised senses. Seven forms of cardiac disorder are considered: sinus, arrhythmia, heart-block, premature contractions or extrasystoles, simple paroxysmal tachycardia, auricular flutter, auricular fibrillation, and alternation of the heart. A preliminary survey of these disorders is given in the opening chapter, in which certain common and generally recognized physical signs are translated into terms of mechanism. In the remaining chapters is given more detailed information concerning definition and nature, pathology, prognosis, and treatment of these disorders.

Symptoms and Their Interpretation. By JAMES MACKENZIE, M.D., LL.D. Third Edition. Paul B. Hoeber, New York. 1918.

In the third edition of "Symptoms and Their Interpretation," two appendices have been added. The first, giving a summary of Mr. Liget's investigations, demonstrates what a great field of research lies open to the surgeon; the second gives suggestions for investigating fields of medicine which are now obscure. The book draws attention to the importance of studying pain and the phenomena of the nervous system as valuable aids to diagnosis. The author believes that it is the recognition of the more obvious symptoms, rather than intricate laboratory methods, which is most useful to the general practitioner, who deals more often with the early symptoms of disease than with the advanced cases. The importance of the reflex phenomena of disease as a basis on which to found a rational principle of diagnosis is particularly emphasized. In this volume, illustrations of this principle are applied to diseases of certain viscera. Symptoms of the heart and stomach are worked out in more complete detail than those of other organs. The subject expounded in this book is a significant one, and

may in the future give a more direct aim to therapeutic endeavor.

The Hodgen Splint. By FRANK G. NIFONG, M.D., F.A.C.S. St. Louis: C. V. Mosby Company. 1918.

This volume, describing the Hodgen Extension Suspension Splint, answers the imperative call for a better understanding of the basic scientific principles of fracture treatment. The author considers the articulated bones in relation to the general contour of the body from the mechanical point of view, and describes old and new appliances designed to assist in restoring anatomic and functional restoration. Treatment of long bones, particularly the femur, is considered. Splints for immobility, for immobility and suspension, and for immobility, extension, and suspension, are described. The Hodgen splint secures the application of extension and counter-extension in the most effective way, a proper reduction of the fracture, suspension of the limb and the freest movements of the patient and the limb, and muscle rest and relaxation through the flexion at the knee and hip. This splint is valuable for the treatment of compound fractures and septic wounds, as drainage, irrigation and dressings may be readily applied. For the routine examination by x-ray it is advantageous, as the patient may be moved into any desired position. The practical methods of making and applying the Hodgen splint are described. This appliance, as it has peculiar usefulness in the treatment of compound fractures and wounds of the soft parts, is particularly adapted for war service.

The Composition of Certain Patent and Proprietary Medicines. COMPILED BY JOHN PHILLIPS STREET, MAJOR, SANITARY CORPS, N. A. Chicago: American Medical Association. 1917.

The purpose of this volume is to render accessible to the general public an accurate record of published analyses, heretofore scattered through many publications. This book includes analyses of about 2,800 of the most extensively advertised "patent" and proprietary medicines. Federal and state officials and the chemists of the American Medical Association have organized and offered results of many of these analyses. Besides remedies of secret composition, this book includes certain "ethical" preparations sold for physicians' prescriptions and a number of preparations recognized in the National Formulary. The compiler has given an accurate transcription of the published analytical data, with references to the publications in which each analysis may be found. No comments upon their relative values are given. The analyses are compiled alphabetically and in compact form.

The Wassermann Test. By CHARLES F. CRAIG, A.M., M.D. St. Louis: C. V. Mosby Company. 1918.

"The Wassermann Test" includes valuable information regarding the use of this test as a diagnostic measure, as a method of controlling treatment, and as a means of determining the prevalence of syphilis. The Wassermann test is described, and the nature of the reaction and the factors which influence the result of the test are explained. The author's modification of the Wassermann test has been recommended for use in all army laboratories. It follows Wassermann in using an extract of foetal syphilitic liver as one antigen and in inactivating the patient's blood serum, and Noguchi in using a human hemolytic system instead of the sheep system. The writer's technic is explained in detail and the results obtained by its use in different stages of syphilitic infections are given. As a diagnostic measure, this method has been proved to be as simple and accurate as any that has been devised. It is particularly valuable as a method of treatment, for by means of it a relapse of syphilitic infection can be diagnosed and treatment can be given in a stage more amenable than after the appearance of clinical symptoms. The method recommended in this book has been used successfully in thousands of syphilitic infections.

Dispensaries. By MICHAEL M. DAVIS, JR., PH.D., and ANDREW R. WARNER, M.D. New York: The Macmillan Company. 1918.

This volume is a presentation of the history of dispensaries and their organization. The status of the patient is discussed, with reference to class, ability to pay, and relation to physicians. A definite scheme in organizing dispensaries is presented. There is a discussion of the details of the various clinics, including equipment, system of admission of patients, records and statistics. Special emphasis is laid on the importance of the follow-up system and the cooperation of the social service in securing proper conditions for the patients' recovery. The annual reports of several hospitals show that the average cost per visit of each patient varies from 52 cents to 18 cents, depending upon the hospital. The importance of public health departments and preventive medicine, of day-clinics for those who are not willing to take charity, and of community organization for the greatest benefit of all are emphasized. In conclusion, the authors state the importance of education and public understanding of the nature of modern medical work and its importance to the community. The book is written for administrators, public health workers and all interested in better medical service for the people.

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THE COVENTRY CASE.

THE Coventry case, as it is conveniently called in England, has apparently attracted little attention in this country; and yet the history of this remarkable litigation contains a variety of instructive facts and theories. It is, therefore, worth while to give a brief account of an action against a scientific and humanitarian body like the British Medical Association, since the results of the suit and the legal opinions on its merits constitute not only a most interesting, but also a virtually unique chapter in medical annals. The moral of the whole affair seems to be the only familiar thing about it; this moral certainly is that it is extremely difficult for most physicians to grasp the principles which govern advocates in courts of law. Another point is that it would be affectation to deny that it is possible to stretch the authority of even the best of corporate bodies.

Whether such an action at law is ever likely

to occur in this country is also an interesting question. To us the probability seems to be that a Coventry case here would be a wild paradox, since the ethical code of practitioners and societies is better defined than in any other country. This may be said without vanity, but the truth of the statement may not be so clear to those who have not followed recent events in Europe and noted the discussions between medical groups which have arisen even in the midst of war. In the Coventry case one of the most prominent features was the dispensary abuse. Much has been said and written about the faults and abuses of the dispensary system, but here again we have the conviction based upon actual experience that these abuses are somewhat better controlled by our own rules.

There is always difficulty about the reporting of such a legal case as the action of Pratt and others vs. the British Medical Association. In one important detail the reports differ. Thus in *The Law Reports* it is stated that there is a new and an old Coventry Dispensary, and it may be inferred that the new institution is under strictly ethical management. But for many years there has been at Coventry a Provident Dispensary. The members of this institution paid a small subscription and received medical attendance during illness. In 1907, four out of seven of the doctors of the dispensary resigned and started a new institution, the New Dispensary. The resignation of these physicians was due to the causes of complaint against the old institution, the British Medical Association urging that there was canvassing of the public for patients through a collector paid on commission; that the management was too much in lay hands; that no proper wage limit was imposed upon the subscribers for medical aid, and that such limit was retrospective. The dispensary, however, was able to find medical officers, since a certain number of practitioners took a different view from the ethical one, and accepted appointments. The plaintiffs in the action had thus been medical officers to the Coventry Provident Dispensary. They brought the action against the British Medical Association, and certain medical practitioners of Coventry, and claimed damages for "conspiracy to injure them in their profession and to libel and slander them and for libel and slander." (*Law Reports*, October, 1918.) The plaintiffs alleged that from 1907 those who were connected with the old dispensary were ostracised by the British Medical Association, and

that under the system of ostracism adopted by the Association for disciplinary purposes no member of the Association would have anything to do with a doctor who was ostracised and no consultant was allowed to attend his patients.

These are the facts. What is the rule of law? There is no doubt that lawyers had generally anticipated the opinion of the presiding justice, who found for the plaintiffs on all counts. On the main question, was the ostracism of these men lawful? It was held that even independently of the circumstance of combination a person commits an actionable wrong if he inflicts actual pecuniary damage upon another by the intentional employment of unlawful means to injure that person's business, even though such unlawful means may not comprise any specific act which is *per se* actionable; that threats constitute unlawful means within the rule; though it is a question of fact whether the words used amount to a threat or are merely a warning; that the defendants had made their boycott of the plaintiffs effective not by warnings only but by the employment of actual threats; that though under the above rule a defendant might be saved from liability, if his acts were committed with "just cause," yet no such justification for threats existed by reason of the fact that the defendants acted for the advancement of the trade interests of themselves or their associates; that malice was not essential to a cause of action based on the pecuniary injury inflicted by the employment of unlawful means to molest a man in his trade, but that the defendants had acted from actual malice and that a corporate body can be guilty of actual malice in the case of any tort in which actual malice is no ingredient; and that the plaintiffs were entitled to damages both for being unlawfully molested in their trade and for defamation.

The exact definition, and the legal and popular meaning, attached to such terms as "conspiracy" and "malice," were carefully set forth in the justice's decision. Perhaps more attention was given to the ingredient of malice than to any other point. The belief of physicians in the ethical quality of medical rules has sometimes blinded them to their complete separation from the rules by which lawyers and men of business guide their conduct. It must be admitted that there are many laymen who express wonder, not unmixed with dislike, at the canons of medical bodies and councils, which they occasionally find

invested with authority in professional transactions. At the present time medical rules are criticised in this spirit. Many of these critics are orthodox supporters of scientific schools of medicine, and yet they seem quite out of sympathy with ethical rules. There can be no doubt that this very common feeling is the secret of some of the strength manifested by various medical cults. Any undue exercise of regular authority should be carefully watched and vigilantly opposed. If these precautions are not taken, medical bodies will be in danger of losing their authority. This is certainly a serious prospect, even if there is no danger of such a successful action as that of Pratt and others vs. the British Medical Association.

INFLUENZA PANDEMIC IN AMERICAN ARMY CAMPS.

By permission of the Surgeon General of the United States Army the report of Major George A. Soper, Sanitary Corps, U. S. A., under date of October 26, 1918, with reference to the influenza pneumonia pandemic in the American army camps during September and October, 1918, has been released for publication, and appeared in *Science* of November 8, 1918. The data and deductions contained in this report have been gathered from telegrams and other sources of daily information.

Four weeks after the first outbreak which occurred at Camp Devens, Ayer, Massachusetts, about September 7, the following report of cases was made among all the troops in the United States for the period September 12-October 18, 1918:

	SEPTEMBER		OCTOBER			TOTAL
	20	27	4	11	18	
Influenza..	10,094	37,493	88,478	90,393	48,287	274,745
Pneumonia	758	4,313	8,655	17,882	14,768	46,286
Deaths ..	96	951	2,275	6,005	5,289	14,616

On September 12 the total number of cases which had been admitted to the hospital at Camp Devens was 599; and in spite of measures taken to check its spread, the disease ravaged rapidly among the soldiers with pneumonia as a frequently fatal sequel. Each day brought a rise, and the decline in the number of cases was a slow one. In nearly every other army camp throughout the United States the characteristics of the epidemic followed closely those of the Devens outbreak. The early cases, often simu-

lating other symptoms, caused considerable confusion and isolation was therefore not effected soon enough. The explosion was sudden, and when the new cases existing in camp rose to 100 a day, it was immediately recognized that an epidemic was prevalent and within one week from the start at Camp Devens, nine large army camps in various parts of the United States reported in quick succession the prevalence of this disease. The following table gives the order of attack in the various camps, but does not cover the reports from posts, aviation stations, and other troop centers:

- Order 1, Devens, Massachusetts, Sept. 12.
- " 2, Upton, New York, Sept. 13.
- " 3, Lee, Virginia, Sept. 17.
- " 4, Dix, New Jersey, Sept. 18.
- " 4, Jackson, South Carolina, Sept. 18.
- " 5, Hoboken, New Jersey, Sept. 19.
- " 5, Syracuse, New York, Sept. 19.
- " 5, Gordon, Georgia, Sept. 19.
- " 5, Humphreys, Virginia, Sept. 19.
- " 6, Logan, Texas, Sept. 20.
- " 6, Funston, Kansas, Sept. 20.
- " 6, Meade, Maryland, Sept. 20.
- " 7, Grant, Illinois, Sept. 22.
- " 7, Taylor, Kentucky, Sept. 22.
- " 8, Sevier, South Carolina, Sept. 23.
- " 8, Lewis, Washington, Sept. 23.
- " 8, Newport News, Virginia, Sept. 23.
- " 9, Pike, Arkansas, Sept. 24.
- " 10, Beauregard, Louisiana, Sept. 25.
- " 10, Eustis, Virginia, Sept. 25.
- " 11, Greene, North Carolina, Sept. 26.
- " 11, McClellan, Alabama, Sept. 26.
- " 12, Kearney, California, Sept. 27.
- " 12, Bowie, Texas, Sept. 27.
- " 13, Johnston, Florida, Sept. 28.
- " 13, Sheridan, Alabama, Sept. 28.
- " 14, Sherman, Ohio, Sept. 29.
- " 14, Dodge, Iowa, Sept. 29.
- " 14, Shelby, Mississippi, Sept. 29.
- " 15, Custer, Michigan, Sept. 30.
- " 16, Travis, Texas, Oct. 1.
- " 17, Cody, New Mexico, Oct. 3.
- " 18, Forrest, Georgia, Oct. 6.
- " 19, MacArthur, Texas, Oct. 7.
- " 20, Wadsworth, South Carolina, Oct. 11.
- " 20, Wheeler, Georgia, Oct. 11.
- " 20, Greenleaf, Georgia, Oct. 11.

Meanwhile from every quarter of the United States it was being reported by civil as well as military authority. But aside from its damage as an epidemic in civil life, the possibilities of its particular effect on the army are many, owing to the difficulty of control by isolation. The disease is carried from place to place by persons and its rapid spread is due to its great infectivity, short period of incubation, missed cases, and the absence of timely precautionary measures. Major Soper believes the Pfeiffer bacillus responsible, and the means of transportation especially due to objects recently contaminated by the buccal and nasal secretions of those who carry the virus. When material from the mouth

or nose of infected persons gets into the nose or mouth of a susceptible person, the disease is produced, and thus the habit of coughing and sneezing helps greatly to spread the infection. It is believed that the Pfeiffer bacillus has been present in America for a long time among healthy persons before this pandemic occurred, but it has not yet been clearly proven to what account the astonishing outbreak was due. So far the acquired immunity by vaccination is in the experimental stage; and the fact that so many relatively young persons of good general health (especially among recruits living under conditions of freedom from conflict, etc.) were victims, leaves the question of susceptibility very much in the dark. Weather is supposed to have an effect upon influenza, but here again, there is no definite relation as all climates seem to have shared in the outbreak, and camps in all quarters of the country were touched.

The present pandemic has been compared with others in America and in other countries—that of 1832 in Paris, when about 40 per cent. of the population was attacked; that of 1872 in London and in some German cities; that of 1889 in London and in America. However, accurate statistics for comparison are not available because in civil life the records are not systematically tabulated as they are in military. In civil life a great many diseases which resembled influenza were given that name by the laity, which led to a confusion in designation. Therefore, for future reference and comparison the data collected from the effect of the pandemic in United States Army camps should prove of lasting value.

PUBLIC HEALTH SERVICE AND INFLUENZA EPIDEMIC.

THE manner in which the United States Public Health Service was able to cope with the widespread epidemic of influenza in various states has been called especially to our attention in a publication recently authorized by that Service. From the onset of the epidemic it was made clear to those in charge of the work of arresting the disease, that the object of the United States Public Health Service was to assist the state and local authorities in their work and not to supplant them. Consequently, when the appeal was sent from Boston, where the epi-

demic was ravaging to an extent which immediately demanded the summoning of outside aid, the Surgeon General called upon the Volunteer Medical Corps, the Red Cross, and the medical and nursing professions as a whole, because it was found that the personnel available in the United States Public Health Service could not hope to fulfill the necessity. In general, the work of the doctors and nurses under the Public Health Service is limited to preventive health measures in rural districts, but national emergencies, such as this disease bids fair to become, were provided for when the Service became a part of the War Department. As a result of this, the Volunteer Medical Service Corps compiled a list of over 1,000 names classified by states. The Public Health Service offered appointments to these men by telegraph, and within forty-eight hours districts throughout New England, where the disease first broke out with such force, were receiving groups of physicians for relief. Later, units were sent to other states where the demand arose. The next problem was that of the nursing supply. And here the cooperation which was given by the Red Cross through its nurses and through its trained attendants deserves unlimited praise. Through its efforts the members of local communities were summoned to assist; and intelligent volunteer workers, under the direction of trained nurses, relieved in a splendid manner the serious emergency caused by the lack of trained nurses. Work was greatly facilitated also by the ruling that all requests for medical, nursing, or other emergency aid in dealing with the epidemic should come to the United States Public Health Service only through the State health office, and in consequence of this arrangement the work was organized on state lines with a representative of the United States Public Health Service as director. This method of appeal from local communities to the Public Health Service was especially effective, as in many districts the few practising physicians were stricken with the disease themselves and the people would otherwise have suffered from the urgent need of medical attendance.

ADAPTATION IN BONE ARCHITECTURE.

THE adaptiveness of bones to new conditions is a problem which has received, perhaps, too

little attention from biologists. The characteristics of animal and human structure have been explained during scientific progress in various ways, by such theories as natural selection, mutation, orthogenesis, Weismann's theory of continuity of the germ plasm, Lamarck's doctrine of inheritance of acquired characters, and the paleontological theory of the importance of environmental factors. In recent years, considerable interest has been taken in the evidence of adaptiveness of organisms. In an article in *The Scientific Monthly* for January, 1919, Professor R. M. Strong presents the following views on this subject:

Skeletal structures are capable of much greater changes than biologists ordinarily realize. Bones are highly adapted to their functions. Their architecture may be greatly altered as the consequence of accidents, new strains, or disease. The organism and its constituent cells have as a condition or principle of their organization adaptiveness to new conditions. This involves susceptibility to stimulation effective in heredity. There is evidence that this capacity is possessed by the germ cells as well as by the somatic cells. The doctrine of absolute isolation of the germ cells from stimulation by somatic cells which may be effective in heredity, is untenable. Much of this apparent isolation or lack of susceptibility may be due to the power of the conservative forces of heredity.

The balance in power between heredity and environmental influence may be considered to vary for different characters and organisms, very likely also for periods in activity. In the course of time, a character may become fixed, or mechanical limits may be reached for adaptation. The architecture of the skeleton is regarded as the consequence, to some extent at least, of inherited adaptations.

The phenomena of bone architecture development and adaptation do not appear to support the ultra-Mendelian conception that new characters may arise only by re-combinations of unchangeable germ-plasm units or by the loss or addition of such units.

RATS AND PLAGUE.

IN the January 9th edition of the *Boston Evening Record*, our attention was called to certain conditions conducive to disease which

are said to prevail along the waterfront of our city. Like all ports of entry for foreign shipping, Boston is bound to receive many undesirable and unbidden forms of disease carriers. But, all individuals, as well as all animals, are sources of contagion, and if, as the Health Department suggests, the trapped rats, which are believed to be responsible for particular forms of epidemic, are carried from the wharf districts to the pathological laboratories by individuals, what of the danger of infection from the professional rat-catcher himself? The question of ridding a city of plague rats is indeed a large problem. Not a small bit of assistance along these lines has been volunteered by the Woman's Municipal League under the direction of Mrs. Albert T. Leatherbee. In 1916, a strenuous effort was brought to bear by the League to rid the city of rats, but for some unapparent reason sufficient coöperation was not forthcoming among the real estate owners in the infested districts. Now, in view of the dire results of the epidemic of influenza which ravaged our city in early autumn, and the recrudescence which has recently occurred, innumerable possibilities of spreading this particular disease are presenting themselves to the good people of Boston, and censorship is being laid at the door of the Health Commissioner for his seeming negligence in effectively encouraging the gentle art of killing rats. This is probably due to the fact that his attention has been directed to other things which he considered, at the time, of more consequence. Just at present there does not seem to be any immediate menace from plague-infested rodents, and neither has it been positively proven that the epidemic of influenza was directly traceable to flea-infested rats. It may be true that since last September, when rat-catching was temporarily discontinued, the number of black rats has increased, but this does not mean that Commissioner Woodward is overlooking his duty toward the public. We have his assurance and that of Mr. Peters in this regard, and there are times in all kinds of endeavor when important duties press upon each other with the consequent danger of relegating some one of the duties to the background. Then it is that suggestions from people, such as were recently offered by the Woman's Municipal League, are timely. We trust that the proper protective measures will be continued.

YEAST.

For a long time the value of yeast has been known and appreciated by the medical profession. Especially has its administration been found helpful in gastro-intestinal conditions. Recently, however, there seems to have arisen a tendency to regard the familiar compressed yeast-cake as a panacea for irregularities of the gastro-intestinal tract which manifest themselves in various skin conditions and in intestinal stasis. As has been stated in previous articles on this subject, the vitamine content of yeast is of very valuable importance, but it still behooves us to retain a circumspect attitude as to its therapeutical success in the treatment of chronic disorders.

MEDICAL NOTES.

POSTPONEMENT OF "HEALTH SUNDAY."—"Health Sunday" will be postponed from February 9 to February 23, in order not to conflict with the memorial services which have been arranged for Theodore Roosevelt for the former date.

FOOT AND MOUTH DISEASE IN ENGLAND.—After being notified by British authorities that foot and mouth disease has broken out again in England, the Bureau of Animal Industry has canceled all permits for importation of cattle, sheep and swine from that country and is taking special precautions for the inspection and quarantine of such animals now en route to the United States. British veterinarians are said to have the outbreak under control.

INFLUENZA IN INDIA.—A report received recently by the Board of Foreign Missions of the Presbyterian church indicates that certain sections of India are being swept by influenza and famine. Conditions are especially distressing at Kodoli, Miraj, Ratnigiri, and Sangli. In Sangli, there have been more than 7,000 cases of influenza, with a daily death rate of 20. The people are suffering also from hunger and cold.

WOMAN DENTIST IN WAR SERVICE.—Dr. Marion W. Stevens, the first woman dentist in the country to enlist for service with the Red Cross, has been assigned to duty in Serbia. Dr.

Stevens holds the rank of first lieutenant for more than a year's service in France.

AMERICAN ASSOCIATION OF ANATOMISTS.—The annual meeting of the American Association of Anatomists, which is usually held during the Christmas vacation, has been postponed until this spring, and will be held, possibly, during the Easter recess.

PARIS ACADEMY OF MEDICINE.—The late Dr. Magnan, the French psychiatrist, left \$5,000 to the Paris Academy of Medicine, to be applied to the foundation of a triennial prize for the best work on mental medicine.

WESTERN UNIVERSITY MEDICAL COLLEGE.—The faculty of medicine in Western University, London, Ont., is planning the erection of a new medical college building at an estimated cost of \$100,000.

GUY'S HOSPITAL FELLOWSHIP.—A research fellowship of the annual value of £150 has been founded at Guy's Hospital in memory of the late Lieutenant R. W. Poulton Palmer and his sister, the late Mrs. E. H. A. Walker, the object of which will be the investigation of obscure diseases in man.

PROMOTION OF DR. ASTLEY ASHHURST.—Dr. Astley P. C. Ashhurst, of Philadelphia, who went to France as a major in command of Base Hospital No. 34, unit of the Episcopal Hospital, has been promoted to the rank of lieutenant-colonel and placed in charge of all the hospitals in the Mantes Sector. His place as director of Base Hospital 34 has been taken by Dr. Emory G. Alexander.

MAJOR J. C. FITZGERALD.—Major J. C. Fitzgerald, director of Connaught and Antitoxin Laboratories, University of Toronto, is at present with the Royal Army Medical Corps, as officer-commanding, No. 39 Mobile Laboratory, France, and acting also as adviser in pathology,

SIBERIAN TYPHUS.—The Red Cross Bulletin for January 13, 1919, describes the work which will be undertaken by the Allies in fighting typhus in Siberia. An Allied anti-typhus train, which is to be under the control of the American Red Cross Commission and is to be operated by the American Red Cross, is to be sent out through Siberia to fight the typhus situation,

which is reported serious. The plan was decided upon by the Allied Sanitary Commission, as a result of recommendations made by the Red Cross.

The funds for this relief enterprise are primarily to be supplied by the various allied powers, though it is conceivable that a certain amount may have to be supplied later by the American Red Cross. Dr. Joshua Rosett of Baltimore has been placed in charge of the train and will be the medical director.

The train is composed of fourteen cars, including cars with bathing facilities, cars for clothing, drugs, and for personnel. On coming to a town where typhus is prevalent, the coöperation of the local authorities, hospitals, and doctors will be obtained, and the work will be done through the Russian people themselves so far as possible. No military force of any kind is to be used; but the train is to be sent out in a spirit of helpfulness to the Russian people. Circulars will be printed in Russian and distributed along the line, telling the people of the necessity for bathing and keeping clean, and stating the general precautions against typhus. While the whole plan is largely experimental, it is believed that this will prove to be one of the most far-reaching projects which the Red Cross has undertaken.

INFLUENZA EXPERIMENTS.—The difficulties surrounding the study of the nature of the virus of influenza is indicated by the following summary of two series of experiments recently carried out, one at Boston and one at San Francisco. These experiments are reported in the *Public Health Report* issued by the United States Public Health Service for January 10.

In Boston the experiments were carried on at the United States Quarantine Station, Gallop's Island. The subjects of experiment were 68 volunteers from the United States Naval Detention Training Camp, Deer Island, Boston. These volunteers had been exposed in some degree to an epidemic of influenza at the training camp or at some station prior to coming to Deer Island; 47 of the men were without history of an attack of influenza during the recent epidemic, and 39 of these were without history of an attack of such illness at any time during their lives.

The experiments consisted of inoculations with pure cultures of Pfeiffer's bacillus, with secretions from the upper respiratory passages, and

with blood from typical cases of influenza. The study was begun on November 13 with an experiment in which a suspension of a freshly isolated culture of Pfeiffer's bacillus was instilled into the nose of each of three non-immunes and into three controls who had a history of an attack in the present epidemic. None of these volunteers showed any reaction following this inoculation. Another experiment was made at a later date with a suspension of a number of different pure cultures of Pfeiffer's bacillus, of which four were recently isolated. Ten presumably non-immune volunteers were inoculated, with the same negative results.

Three sets of experiments were made with secretions, both unfiltered and filtered, from the upper respiratory tract of typical cases of influenza in the active stage of the disease. In these experiments a total of 30 men were subjected to inoculation by means of spray, swab, or both, of the nose and throat. The interval elapsing between securing secretions from the donors and inoculation of the volunteers was progressively reduced in these experiments so that in the third of the series the interval at most was 30 seconds. In no instance was an attack of influenza produced in any one of the subjects. An experiment was made in which the members of one of the groups of volunteers which had been subjected to inoculation with secretions were exposed to a group of cases of influenza in the active stage of the disease in a manner intended to simulate conditions which in nature are supposed to favor the transmission of the disease. Each of this group of ten volunteers came into close association for a few minutes with each of 10 selected cases of influenza in the wards of the Chelsea Naval Hospital. At the time the volunteers were exposed to this infection the cases were from 10 to 84 hours from the onset of their illness, and four of them were not over 24 hours from the onset. Each volunteer conversed a few minutes with each of the selected patients, who were requested to, and coughed into the face of each volunteer in turn, so that each volunteer was exposed in this manner to all 10 cases. The total exposure amounted to about three-quarters of an hour for each volunteer. None of these volunteers developed any symptoms of influenza following this experiment.

Another experiment was conducted at Angel Island Quarantine Station, San Francisco. The volunteers for the experiment were from the

Yerba Buena Naval Training Station. The volunteers who were used in these experiments differed from those used at Boston in two respects—first, the personnel of the Yerba Buena Station had not been exposed to influenza in the present epidemic and were, therefore, presumed not to possess any special natural immunity; second, all of the men had been vaccinated with large doses of bacterial vaccine containing Pfeiffer's bacilli, the three fixed types of pneumococci and hemolytic streptococci. In experimenting with cultures, a group of 10 volunteers was divided into two equal squads. One group had instilled into the nostrils of each man a heavy suspension made by emulsifying cultures of eight strains of Pfeiffer's bacillus without filtration. The other group had the same material used after passage through a Berkefeld N candle. The results were negative, though the men were held under observation for seven days.

In working with secretions, four groups of volunteers, of 10 men each, were used. Emulsions of secretions from the upper respiratory passages or active cases of influenza from 15 to 48 hours from the onset were instilled into the nose by means of a medicine dropper or with an atomizer. In each experiment approximately an equal number of volunteers were treated with the same emulsion after filtration through a Berkefeld N candle. In every case the results were negative, so far as the reproduction of influenza is concerned. The men were all observed for seven days after inoculation. In three cases in which unfiltered material had been instilled, sore throat developed which corresponded clinically to acute tonsillitis, and in two of these cases an almost pure culture of a hemolytic streptococcus was secured from throat cultures.

A filtered emulsion of material from the upper air passages of an acute case of influenza was dropped into the conjunctivae of two volunteers and the same material injected subcutaneously into one volunteer. In each case the result was negative.

One cubic centimeter of blood taken during the active stage of influenza was inoculated subcutaneously into one volunteer with negative results.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending January 25, 1919, the number of deaths reported was 401 against 282 last year.

with a death rate of 26.25 against 18.74 last year. There were 49 deaths under one year of age against 56 last year.

The number of principal reportable diseases were: Diphtheria, 56; scarlet fever, 25; measles, 8; whooping cough, 20; typhoid fever, 3; tuberculosis, 46.

Included in the above were the following cases of non-residents: Diphtheria, 2; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 8; scarlet fever, 1; whooping cough, 1; tuberculosis, 12.

Included in the above were the following non-residents: Diphtheria 2; scarlet fever 1; tuberculosis, 3.

GIFTS TO HOSPITALS.—By the will of the late Thomas B. Fitzpatrick, Boston, several hospitals have received the following bequests:

Lying-In Hospital, \$2,000; St. Elizabeth's and Carney hospitals, each \$1,000; and Newton and Framingham hospitals, each \$500.

EAST BOSTON MEDICAL SOCIETY.—The annual meeting of the East Boston Medical Society was held on January 22. The following officers were elected: Frank H. Tilton, president; Robert Bonney, vice-president; A. L. McLaren, treasurer; J. Danforth Taylor, secretary.

Dr. David Seannell narrated some of his experiences in France.

MASSACHUSETTS DENTAL SOCIETY.—The Central District of the Massachusetts Dental Society, Worcester, Massachusetts, presented the film "Fit to Fight," at the Worcester Trade School Hall on February 3. Dr. J. J. Carroll of the State Department of Health delivered an address on the subject, "Venereal Disease." The motion picture was prepared by Surgeon-General William C. Gorgas, as a part of his program for combating venereal disease.

MEDICAL ADVISORY BOARD.—A medical advisory board, consisting of eleven physicians, has been appointed by Mayor Peters. From time to time the board will confer with Health Commissioner Woodward about the city's health problems. The following doctors have agreed to give their time for this service: Dr. R. M. Smith, Dr. John Treanor, Dr. Anna G. Richardson, Dr. E. J. Denning, Dr. J. D. Barney, Dr. D. L. Edsall, Dr. J. J. Minot, Dr. H. Linenthal,

Dr. H. M. Pollock, Dr. H. E. Bragdon, and Dr. J. B. Blake.

OPPOSITION TO APPROPRIATION FOR INFLUENZA INVESTIGATION.—Dr. Eugene R. Kelley, State commissioner of health, is reported to have opposed the introduction of a bill which would authorize an appropriation of \$50,000 for a further investigation of influenza. Dr. Kelley expressed the belief that an appropriation for promoting the use of a serum might be used to good advantage, but that money expended for purposes of investigation would be wasted.

MEETING OF VISITING NURSING ASSOCIATIONS.—The fourth annual meeting of the Massachusetts Committee of Directors of Visiting Nursing Association was held recently in Boston. The morning session was devoted to the subject, "Public Health Nursing in Rural Communities," and to a general discussion of a bill now before the Massachusetts Legislature providing for the registration and licensing of paid nursing attendants. Addresses dealing with various aspects of visiting nursing were delivered by Dr. Merrill E. Champion, Mrs. Clark Durant, Miss Mary Beard, and Miss Ella Phillips Crandall. The secretary's report stated that no year has ever brought such pressure on visiting nurse associations as the past one, due, principally, to the epidemic of influenza.

LONG ISLAND HOSPITAL, BOSTON.—The twenty-first annual report of the Boston Infirmary Department contains a report of the Visiting Medical Staff of the Long Island Hospital. The hospital medical staff has been increased by the addition of two assistant resident physicians, a resident pathologist, pathological technician, x-ray technician, and three supervisors of nurses. A further innovation has been made in the partial substitution of women house officers for men. Equipment for the pathological laboratory and for the dental department has been purchased. There have been admitted to the hospital during the year 700 men and 339 women.

The Long Island Hospital Training School for Nurses has graduated 17 nurses for the year 1917-18.

REPORT OF THE BOSTON HEALTH DEPARTMENT.—The annual report of the Health Department of Boston, submitted for the year 1917, contains detailed reports from the five executive divi-

sions of the Health Department: the Division of Medical and Child Hygiene, the Sanitary Division, the Division of Food Inspection, the Division of Vital Statistics and Accounts, and the Laboratory Division. Among the most important aspects of the work for the year 1917 may be mentioned the campaign against venereal disease, the campaign for the conservation of child life, the promotion of educational work by means of lectures, lantern slides, bulletins, public exhibits, and posters, and the establishment of several local health units. The total number of deaths recorded for the year 1917 was 12,728; degenerative changes in the arteries and internal organs, tuberculosis, lobar pneumonia, cancer, and a combination of conditions which may be summarized as causes of infant mortality, have been the most frequent causes of death.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—

Reports of cases of influenza and pneumonia cases indicate that the figures are again increasing. On January 21, 217 cases of influenza and 15 of lobar pneumonia reported to the Boston Health Department. There were 15 deaths from influenza and 6 from pneumonia.

On January 22, 144 cases of influenza, with 17 deaths, and 25 new lobar pneumonia cases and 4 deaths were reported. Dr. Woodward is reported to have issued the following warning to the general public:

"I wish you would point out the necessity for continuing precautions hitherto urged. So long as influenza remains in the community and so long as the community does not recognize colds which cannot be distinguished from influenza as being quite as dangerous as influenza itself, no satisfactory results can be anticipated from restrictive measures directed against influenza."

On January 23, 150 cases of influenza, with 20 deaths and 9 new lobar pneumonia cases with 6 deaths, were reported to the Health Department of Boston.

One hundred and ninety-two cases, with 10 deaths, and 14 new lobar pneumonia cases, with 6 deaths, were reported to the Health Department of Boston on January 24. Dr. Woodward is reported to have issued the following statement:

"The increase should serve to remind the public of the continued danger from influenza, notwithstanding the decrease in the number of deaths recorded, and to remind them of the necessity of constant vigilance on the part of

every one to protect his own health and the health of the community."

On January 28, 95 cases of influenza and 14 of pneumonia, with 7 deaths from influenza and 9 from pneumonia, were reported to the Boston Health Department. Dr. Woodward, health commissioner, is reported to have made the following statement:

"While the deaths from influenza are decreasing, those from pneumonia are probably tending to increase slightly. These reported deaths from pneumonia, however, include pneumonia of all forms and from all causes, and as the causes which may give rise to pneumonia tend to increase as the season advances a corresponding increase in deaths from pneumonia is to be expected. There are usually eight or nine deaths from pneumonia in Boston daily at this season."

PULMONARY TUBERCULOSIS AMONG TENEMENT DWELLERS IN BOSTON.—

The December issue of the *Commonwealth* presents data concerning the apparent relation of phthisis, pulmonary tuberculosis, to the life and habits of the people in certain districts in Boston. A patient and intensive examination of 414 cases in the North, West, and South Ends of the city has disclosed many of the causes which are responsible for lowering the resistance of the body to the disease. The relation of tuberculosis to living conditions has been found to be an important one.

The history of each case studied in this investigation was charted from information secured through the cooperation of the out-patient department of the Boston Consumptives' Hospital and social workers, and from personal visits to homes and industries. At the home, methods of recreation, habits, length of residence and housing were examined. Not only the housing at the immediate residence was studied, but also that at previous residences.

In this study, the economic condition, including size of families, amount of income, rents, insurance, charitable aid, and especially the quality and quantity of food, was closely examined. In the majority of cases, however, lack of proper food was greatly outweighed as a cause of tuberculosis by bad housing conditions. The investigators are convinced that many cases of tuberculosis in these districts were brought about solely because of a continued residence under bad housing conditions. A summary of causes in the order of their importance shows bad housing in 249 cases, 61.4 per cent.; previ-

ous diseases in 105 cases, 25.3 per cent.; excesses, 101 cases, 24.9 per cent.; repeated contacts, 75 cases, 18.1 per cent.; faulty food supply, 63 cases, 15.2 per cent.; exhaustion, 58 cases, 11.6 per cent.; occupation, 31 cases, 7.5 per cent.; lack of recreation, 19 cases, 4.6 per cent.; two or more causes, 221 cases, 53.3 per cent.

This study indicates bad housing as the greatest predisposing cause of tuberculosis. The injustice of the city toward those people who are forced to live under such conditions is manifest.

Obituary.

THOMAS FRANCIS HARRINGTON, M.D.

DR. THOMAS F. HARRINGTON, deputy commissioner of the State Board of Labor and Industries, died at his home in Boston, January 19, 1919, after a five weeks' illness from ptomaine poisoning. He was formerly director of school hygiene in the Boston schools.

Dr. Harrington was born in Lowell on June 10, 1866, and attended the Lowell High School. He was graduated from the Harvard Medical School in 1888, and continued his studies for a year in Europe. He served later as house officer at the Massachusetts General Hospital, after which he established a medical practice in Lowell. He served as chairman of the Lowell Board of Health for several years and originated the idea of wetting down the pavements during hot weather.

In 1894 he was made secretary of the United States Pension Board and in 1907 he was appointed director of physical training and athletics in the Boston public schools. Throughout his régime in this capacity, Dr. Harrington worked with the idea that hygienic physical culture was what children need rather than building up muscle. Later he was elected president of the Boston Playground Association. In 1910 he attended the International School Hygiene Congress in Paris. In the same year he was appointed physician-in-chief of St. Elizabeth's Hospital, then on East Brookline street. In 1913 he was chosen a delegate from the United States to the Seventeenth International Congress of Medicine, held in London.

In May, 1915, Dr. Harrington was selected as deputy health commissioner by the State Board of Labor and Industries, from forty applicants.

Two years ago he was appointed on the medical staff of the new State Guard by former Governor McCall. He became known to Harvard graduates through his "History of the Harvard Medical School," which was edited by the late Dr. J. G. Mumford and published by the Lewis Publishing Company in 1905. He was formerly vice president of the Harvard Medical Alumni Association. In 1908 he was orator of the Massachusetts Medical Society. He was a member of the American Medical Association, National Association for the Relief and Control of Tuberculosis, Harvard Medical Alumni Association and the Massachusetts Association of Boards of Health. He leaves a wife and three sons.

ROBERT VALENTINE SAWIN, M.D.

DR. ROBERT V. SAWIN, of Brimfield, died at the home of his daughter in Storrs, Ct., January 19, 1919, of Bright's Disease, after an illness of eight months.

He was born in Worcester July 13, 1856, and was educated in the Worcester schools and Amherst College, where he was graduated in 1881. His medical degree was taken at the Jefferson Medical College, Philadelphia, in 1885; in 1887 he married Miss Lettie Washburn of Brockton and settled in Brimfield. He had a large practice in this town and in Holland, Wales, and Union, Ct. Among the positions Dr. Sawin held were: member of the school committee for 31 years, trustee of the Hitchcock Academy for 26 years, member of the staff of the Wing Memorial Hospital, Palmer; chairman of the overseers of the poor, 16 years; and chairman of the trustees of the Brimfield public library, 14 years. He joined the Massachusetts Medical Society in 1892, was a member of the American Medical Association, a Mason of high degree, a Knight Templar and a Shriner. Besides his daughter, he is survived by a son, recently returned from service at Camp Greenleaf, Ga. His wife died in 1912.

FREDERIC WESTON TAYLOR, M.D.

DR. FREDERIC WESTON TAYLOR, a practising physician of Cambridge, died suddenly January 21, 1919, of heart disease, at his home, 1735 Massachusetts avenue.

Dr. Taylor was a native of East Cambridge, where he was born June 22, 1856. He was the son of Dr. John B. Taylor, who was one of the old practitioners of that section. The son was graduated from Harvard College in the class of '78, and from the Harvard Medical School in 1882. He served as a house officer at the Massachusetts General Hospital and then went to Europe, where he devoted another year to studying at some of the leading medical centres. On his return to this country he began practice in Cambridge in the early eighties.

He was a member of the North Congregational church and had been senior deacon for a number of years. He was allied with the various medical societies, national, state and county, but belonged to no social organization. From 1892 to 1900 he was a member of the Cambridge school board; he was a visiting physician to the Cambridge Hospital; since 1913 he had been a member of the important committee on membership and finance of the Massachusetts Medical Society, and was a vice-president of that organization. He is survived by his wife, who was Charlotte I. Houghton of Cambridge, to whom he was married in 1890; and three children—two sons, Dr. John H. Taylor of the U. S. A. Medical Corps, at present stationed at Camp Shelby, Miss.; and Lieut. Warren O. Taylor of the Quartermaster Corps, stationed in France—and a daughter, Miss Martha Taylor.

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR DECEMBER, 1918.

General Prevalence. The total number of cases reported for the month of December was 46,878, 42,018 of which were influenza cases, leaving a balance of 4,860 for the diseases usually reported.

Influenza. A continuation and recrudescence of the pandemic has affected all parts of the State during the month. Estimating the virulence of the infection by death returns and the calls for assistance, it becomes plain that the outbreak is of less intensity.

Lobar Pneumonia was reported in 1,202 cases, an increase of 586 cases over November. Many of these reported lobar pneumonias were, without doubt, of influenzal origin.

Diphtheria for December showed a slight increase over the preceding month, the total number of cases reported in December was 584 as compared with 532 for November.

Scarlet Fever. The number of cases reported for the month of December was 393 cases, an increase of 106 cases over 287 reported in November.

Measles showed an increase of 167 cases for December, 346 cases being reported as compared with 179 for November.

Typhoid Fever showed a decrease in number of reported cases, as 44 cases were reported in December, while in November 48 cases were reported.

Veneral Diseases continue to be steadily reported. There were 645 cases of gonorrhea reported and 273 cases of syphilis. These figures do not by any means reflect the true picture.

Whooping Cough was reported in 217 instances in December; 216 cases were reported in November.

Outbreaks. There has been no outbreak during the month other than the recrudescence of influenza. The incidence of the disease has been scattered throughout the State, with no city or town markedly exceeding its endemic index.

RARE DISEASES.

Anterior Poliomyelitis was reported from Chelsea, 1; Haverhill, 1; Topsfield, 1; total, 3.

Dog-bite requiring anti-rabic treatment was reported from Lawrence, 1.

Dysentery was reported from Lawrence, 1.

Epidemic Cerebrospinal Meningitis was reported from Arlington, 1; Boston, 4; Brookline, 1; Cambridge, 2; Camp Devens, 2; Fall River, 1; Great Barrington, 2; Haverhill, 1; Malden, 1; Newton, 1; Northboro, 1; Salem, 2; Westfield, 1; Winthrop, 1; total, 21.

Malaria was reported from Boston, 1; Camp Devens, 1; Springfield, 1; total, 3.

Septic Sore Throat was reported from Boston, 2; Brookline, 1; Fall River, 3; Haverhill, 2; Salem, 1; Winchendon, 1; total, 10.

Tetanus was reported from Gloucester, 1; Wakefield, 1; total, 2.

Trachoma was reported from Boston, 5; Chelsea, 1; Gloucester, 1; Somerville, 1; Watertown, 1; total, 9.

Occupational Diseases reported by the State Board of Labor and Industries: Disease, dermatitis; occupation, hog killer; locality, Somerville; sex, male; age, 36; color, white.

NOTICES.

UNITED STATES CIVIL SERVICE EXAMINATIONS.
MEDICAL INTERNE, ST. ELIZABETH'S HOSPITAL.

March 12, April 9, and May 7, 1919.

The United States Civil Service Commission announces open competitive examinations for medical interne, for both men and women, on the dates stated above, at the usual places of examination. A vacancy in Saint Elizabeth's Hospital, Washington, D. C., at \$900 a year, and future vacancies requiring similar qualifications, at this or higher or lower salaries, will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The positions are tenable for one year, and pay \$75 a month and maintenance. During the year, however, a post-graduate course in mental and neurological diagnostic methods is given, an examination is held, and promotions to the next grade, junior assistant physician, are made. Beyond this there is regular advancement for men whose services are satisfactory. Saint Elizabeth's Hospital has over 3,000 patients and about 500 employees to care for. In addition to the general medical practice offered, the scientific opportunities in neurology and psychiatry are unsurpassed.

Applicants must show that they are graduates of a reputable medical college or that they are senior students in such an institution, and expect to graduate within six months from the date of this examination. The names of senior students will not be certified for appointment in the event they attain eligibility in the examination until they have furnished proof of actual graduation.

Applicants must not have graduated previous to the year 1915 unless they have been continuously engaged in hospital, laboratory or research work along the lines of neurology or psychiatry since graduation, which fact must be specifically shown in the application.

Applicants must be unmarried.

Age, 20 years or over on the date of the examination.

No sample questions of these examinations will be furnished.

Applicants must submit to the examiner on the day of the examination, their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted.

These examinations are open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board at any city where such examinations are held. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination, as given at the head of this announcement, should be stated in the application.

DENTAL INTERNE (MALE).

March 12, April 9, and May 7, 1919.

The United States Civil Service Commission announces open competitive examinations for dental interne, for men only, on the dates stated above, at the usual places of examination. Vacancies in Saint Elizabeth's Hospital, Washington, D. C., at \$600 a year, with maintenance, and in positions requiring similar qualifications at this or higher or lower entrance salaries, will be filled from these examinations, unless it is found in the interest of the service to

fill any vacancy by reinstatement, transfer, or promotion.

The department states that it reserves the right to terminate the appointment at the expiration of one year of service if it is deemed advisable to do so.

In addition to many interesting cases presented, the dental interne is given an excellent opportunity for study and for doing experimental and research work in the pathological, histological and other laboratories of the institution.

Applicants are required to be graduates or senior students of regularly incorporated dental colleges, and applications will not be accepted from persons who have graduated for more than two years. The names of senior students will not be certified for appointment until they have furnished proof of actual graduation.

Statements as to training and experience are accepted subject to verification.

Applicants must be unmarried.

Age, 20 years or over on date of examination.

No sample questions of these examinations will be furnished.

Applicants must submit to the examiner on the day of the examination, their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

These examinations are open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board in any city where such examinations are given. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

CLINICAL CHART OF RENAL DISEASES.—The Clinical Chart of Renal Diseases accompanying the article by Dr. H. S. Jellison, published in the issue of the JOURNAL for Jan. 2, 1919, has been reprinted in convenient form for the use of physicians and medical students, and may be had at the JOURNAL office for twenty-five cents a copy.

SOCIETY NOTICE.

NEW ENGLAND PEDIATRIC SOCIETY.—The fifty-seventh meeting of the New England Pediatric Society will be held in the Lower Amphitheatre, Out-Patient Department, of the Massachusetts General Hospital, on Wednesday, Feb. 19, 1919, at 4.30 p.m.

Clinical cases will be presented by members of the Staff.

WILLIAM E. LADD, M.D., *President*,
RICHARD M. SMITH, M.D., *Secretary*.

RECENT DEATHS.

LIEUTENANT ADMONT HALSEY CLARK, M. C., died in Johns Hopkins Hospital on October 13, from pneumonia following influenza, at the age of thirty years. Dr. Clark had been assistant professor of pathology in Johns Hopkins University, resident pathologist in Johns Hopkins Hospital, and had done brilliant experimental work in pneumonia and diabetes.

MAJOR ALFRED REGINALD ALLEN has been killed in France. He was instructor in neurology in the University of Pennsylvania. Although a leading neurologist, Major Allen preferred to enter active infantry service.

The Boston Medical and Surgical Journal

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Original Articles.

ACUTE CHANGES OCCURRING IN THE CELLS OF THE SOLAR PLEXUS IN INTESTINAL CONDITIONS.

BY ABRAHAM MYERSON, M.D., BOSTON.

Assistant Professor of Neurology, Tufts College Medical School; Chief Medical Officer, Out-Patient Department, Psychopathic Department, Boston State Hospital.

[From the Pathological Laboratory of Taunton State Hospital.]

IN some previous papers I described chronic pathological changes taking place in the sympathetic nerve cells of the solar plexus of insane patients and described some acute changes as well. The following two cases in which acute intestinal conditions occurred, were associated with acute changes of the nerve cells of the type described as acute Nissl degeneration. The relationship of the sympathetic nerve system to intestinal conditions has been very insufficiently studied and, in part, this is the reason for presenting these two cases.

CASE 1. White woman, No. 16344, autopsy No. 152. Entered the hospital April 1, 1904, age, 42. The diagnosis of dementia praecox, catatonic and paranoid, rested on the following mental symptoms: Delusions of persecution, poisoning, and of reference; markedly negativ-

istic; hallucinations of hearing; increasing dementia. She died April 14, 1916. Unfortunately, she had been for so long a time in a highly negativistic, semi-stuporous state that no change was noted until just before death, when the distention of the abdomen became marked. Autopsy held 18 hours later. Summary of gross findings—Emaciation, poor development. Small heart—180 gms. Small aorta. Lungs—chronic passive congestion. Atrophy of spleen, liver, pancreas, and kidneys was marked. Atrophy of ovaries and uterus. No arteriosclerosis anywhere.

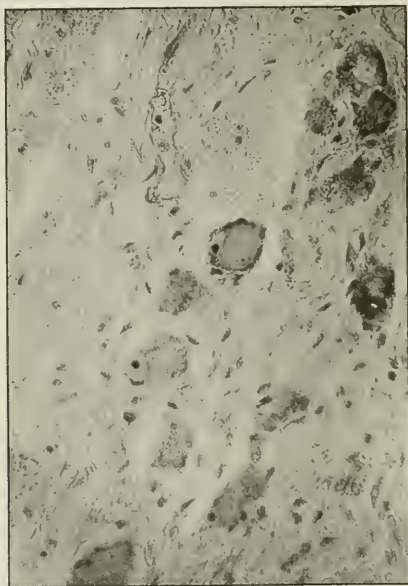
Brain. Few adhesions of dura. Pia not remarkable. Brain firm. Section negative, except for slight congestion. Weight of brain, 1150 gms. Spinal cord negative. Pituitary negative.

Abdomen. Volvulus was found of somewhat unusual character. The ascending colon had a long mesentery which had become twisted so that this portion of the gut was thrown over to the left side and the small intestines had looped themselves around the stalk in an intricate manner. The ascending colon was distended, deep red generally, and deep blackish red in places. There was no break anywhere noted. The small intestines were distended. Peritoneum and mesentery much injected and moist. Scattered small hemorrhages.

Cause of Death. Volvulus. Passive congestion of lungs.

Microscopic Examination. The main interest centers on the nervous system, since there was nothing of unusual character in the body organs. In general, the macroscopic examination was confirmed.

Brain shows chronic changes often found after middle life and accompanying emaciation. Whether they are related to dementia praecox is not at all certain. There is atrophy of the nerve cells, especially the deeper layers; very slight satellitosis. Lipochrome granules in the large nerve cells. Very occasionally a cell showing acute changes with diffuse Nissl staining and eccentric nucleus noted.



Sympathetic cells of solar plexus. Cells here show two types of change. First, a chronic type, characterized in the previous paper before mentioned as belonging to "neurathrepsia." There is increase of the capsular cells, with atrophy of nerve cells, marked pigmentation, which on analysis are lipochrome granules, eosinophilic granules, and by silver staining after the fat is removed, the black or argyrophilic granules. Second, acute changes of typical axonal nature are present. There is almost complete disappearance of the Nissl bodies, only the fringe of

the cell staining a diffuse blue. The nucleus in the majority of cases is in the very periphery of the cell and in certain cases has been completely extruded.

In striking contrast to the changes found in this ganglion is the condition presented by the Gasserian ganglion which, of course, represents anatomically and functionally a different type of ganglion. Here the cells show typical normal Nissl staining and the nuclei are central. Though there are some chronic changes presented, nothing of acute nature has occurred.

Summary of Case. A dementia praecox patient, woman of middle life, dying of volvulus, shows acute axonal reaction in the sympathetic cells of the solar plexus, without corresponding changes elsewhere.

CASE 2. No. 20085, autopsy No. 146. Entered hospital April 22, 1912, 20 years of age; died March 26, 1916.

Summary of Clinical History. Always backward; enuresis until the age of 15; active mental symptoms at 18. Physical examination at the time of entrance showed exaggerated tendon reflexes, ankle clonus; unsteady gait. Positive Wassermann reaction in blood. Spinal fluid—Puncture attempted and unsuccessful because of patient's intense excitement and resistance. Mentally, patient is excited and grandiose. Gradually deteriorated, became apathetic and deeply demented—bedridden. She died on date mentioned. Had, clinically, signs that pointed to the consolidation of left lung.

Summary of Autopsy Findings. Marked emaciation. Left lung is pushed upward and occupies only the upper part of the chest. Rest of pleural cavity occupied by serous fluid; no pus, no fibrin. There are a few scars, moderately calcified, in the thickened pleura of the apex. The lung is not solid.

Aortitis. Moderate myocarditis. Atrophy of spleen. Hepatitis. Cystic ovary.

Brain. Typical well advanced general paresis; that is, thickened dura, cloudy and adherent pia, atrophy of convolutions in frontal and parietal portion with increased firmness, granulations in fourth ventricle, increased cerebrospinal fluid, etc. Cord shows moderate changes in posterior columns.

The large bowel and part of the ileum were distended with impacted feces. The blood vessels of the peritoneum were distended and engorged.

Microscopic Examination. Lung shows con-

gestion, compression, polymorphous and endothelial leukocytes in alveoli, no fibrin, occasional giant cell seen in thickened pleura. Brain—typical paresis. Perivascular spaces filled with lymphocytes and plasma cells. Pia thickened and contains exudate. Nerve cells show disarrangement of layers—atrophy—vacuolization. Diffuse Nissl staining. Central nuclei. Red cells present. Increased capillaries, increased neuroglia cells.

Sympathetic. Very decided acute changes in nerve cells with only a slight fringe of methylene preceding cases; that is, there is pallor of the nerve cells with only a slight fringe of methylene blue staining material at the periphery. The nucleus is peripheral and it shows varying degrees of extrusion. The chronic changes so well marked in the previous case are not nearly so prominent in this section—pigmentation is less marked.

Summary. A juvenile paretic, dying of pleurisy with effusion of tubercular origin, fecal impaction and congestion of peritoneal blood vessels, shows acute axonal reaction in the sympathetic cells of the solar plexus.

DISCUSSION.

The pathological condition here reported as occurring in insane patients is not at all related to the mental conditions of the patients, since in neither paresis or dementia praecox, as these conditions come to the autopsy table, can it be found. This statement is based on routine study of over 100 cases. Nor can it be related to tuberculosis, which is the cause of death in the second case, for it is not present in other tubercular cases. Emaciation itself plays no part; for many of the patients who are autopsied in insane hospitals are emaciated, dying, as they do, of chronic diseases and often refusing nourishment. While it is impossible on the basis of two cases to make any conclusions regarding the phenomenon, a tentative relationship may be discussed. It is very possible that pathological conditions that affect the blood supply of the ganglion are responsible for the acute changes described. It is well known that the ligature of blood vessels leading to other parts of the nervous system produces such changes. The volvulus has its main effects through this change in blood supply and it is conceivable that fecal impaction would disturb the circulation of the abdomen enough to produce anaemia or congestion to the nerve cells of the

ganglion. If this be so, it is very likely that part of the collapse and shock noted in such conditions as volvulus, intussusception, and acute intestinal obstruction of any kind may be related to the changes in the nerve cells of the solar plexus. A disturbance created in the center which controls so many viscera and plays so large a part in blood vessel control may well be general in symptomatology.

Speculation becomes somewhat more precarious in passing from these acute conditions to chronic disturbance in the abdomen. Chronic congestion of the peritoneal vessels such as occurs with adhesions, obstipation, cirrhosis of the liver, etc., should be studied from the viewpoint here tentatively advanced. Mechanical and nutritive changes acting on the sympathetic cells of the abdomen rather than any auto-intoxication may account for the generalized symptomatology.

Here, too, it is possible that one may find an explanation of the change in mood, so often immediately noted after an evacuation of the bowels. The change produced is almost instantaneous with many people. Mood and emotion are largely vaso-visceral manifestations; and it seems to me likely that a loaded bowel changes conditions within the intestine in such a manner as to affect the blood supply of the sympathetic cells scattered in the ganglia throughout the posterior wall of the abdomen. That not all people are bothered by a loaded bowel may be explained by some difference in the architecture of the peritoneum, in the length of the attachments, any difference in the ligaments, in other words, it may be related to mechanical differences so that congestion and vascular disturbances may much more easily be produced in certain individuals than in others.

Clinical Department.

THREE CASES OF PREGNANCY ASSOCIATED WITH TUMOR.

By FREDERICK W. JOHNSON, M.D., F.A.C.S., BOSTON.

THESE cases were operated on by me at the Carney Hospital during October and November, 1918, and January, 1919.

CASE No. 3256 entered the hospital October 21, 1918. Thirty-eight years of age. Three chil-

dren, youngest eight years old. No miscarriages. Menstruation began at fifteen and has always been profuse. Last unwell May 30, 1918. Previous period, April 15, 1918.

Noticing an enlargement of the abdomen, she consulted her family physician who sent her to me. She complained of no pain or discomfort. Physical examination revealed a double mitral murmur and a uterus the size of a five-months pregnancy, pushed up out of the pelvis by a cystic tumor which filled the hollow of the sacrum. Urine negative.

Operation. October 23. Gas-ether. A right ovarian cyst, with pedicle, the size of a medium grapefruit was easily delivered from Douglas' pouch. A grape-like bunch of papillomatous disease had perforated the cyst wall.

Pathologist's Report. Papillary cysto-adenoma. Her recovery was uneventful.

CASE No. 3279 entered the hospital November 25, 1918.

Thirty-six years of age. One child eighteen months old. Three miscarriages. Menstruation began at fifteen and has always been profuse. Eclampsia at time of labor. Last unwell August, 1918. Previous period, July, 1918.

While walking, was suddenly seized with severe pain in the right lower quadrant of the abdomen. Nausea and vomiting soon appeared. After a short time, the pain and soreness became located at McBurney's point. She was sent in as an emergency appendix. I saw her on admission, and two hours after, she had received a subcutaneous of gr. $\frac{1}{4}$ morphia. Temperature 97.4°. Pulse 80. No spasm of recti muscles. Moderate pain on pressure over McBurney's point. The nausea and vomiting had stopped. The uterus, the size of a three-months pregnancy, was well up out of the pelvis. An ice bag for the abdomen and morphia subcutaneously, should the pain be severe, were ordered. There was but little pain the next day, and in two days there was none and no sensitiveness on pressure. The urine was negative. Discharged November 30. Diagnosis: Appendicitis (?).

December 5, 1918, the pain returned in the same locality and was accompanied by nausea and vomiting. Temperature sub-normal. Pulse 78. No spasm of recti muscles (a subcutaneous of morphia had been given twice before she reached the hospital). Severe pain on pressure over McBurney's point. In two days, with

rest in bed and ice bag on abdomen, the pain had subsided.

Operation. December 10, 1918. Gas-ether. The uterus was the size of a four-months pregnancy. On the right, just behind the uterus, there was a cyst, with a long pedicle, the size of a tangerine orange. This was removed. The cyst was filled with a bloody fluid and there had been hemorrhage into the cyst wall. The appendix was normal.

Diagnosis. Right ovarian cyst with twisted pedicle.

Her recovery was uneventful.

CASE No. 3299 entered the hospital January 5, 1919. Thirty-six years of age. Married five months. Dysmenorrhea for the past two years. Last unwell September 14, 1918. Has noticed gradual increase in size of abdomen and is able to make out two distinct tumors, "one on the left, which is soft, and one on the right, which is hard." There had been nausea and vomiting at intervals, day and night, since October 31. The uterus, the size of a three and one-half months pregnancy, was found pushed up out of the pelvis. The vulva and vaginal walls were of a violet color. On the right there was a hard mass the size of a child's head, extending up under the liver. Urine normal.

I saw this patient first June 14, 1918 (six weeks before marriage). She consulted me for pain in the lower right quadrant of the abdomen, which she had had, off and on, for two years. I then found a fibroid the size of my two fists, and advised its removal.

Operation. January 7, 1919. Gas-ether. On the right of the uterus, which was about the size of a three and one-half months pregnancy, there was a fibroid, mostly subserous but a part of it interstitial. The tumor was enucleated without much difficulty. It weighed three and one-half pounds. Although she was much exhausted by the frequent nausea and vomiting, day and night, and the loss of nourishment, I did not consider it a case of pernicious vomiting but, nevertheless, thought it wise to follow Dr. John Cooke Hirst's directions.

She was given subcutaneously, as soon as it was time for the ether vomiting to have ceased. 2 cc. corpora lutea, and 1 cc. on four successive days. Improvement followed the first dose and the nausea and vomiting ceased entirely and did not return after the fourth subcutaneous injection. Her recovery was uneventful.

REPORT OF A CASE OF SUBCUTANEOUS RUPTURE OF THE SPLEEN.

BY I. J. WALKER, M.D., BOSTON.

CASES of rupture of the spleen, while not uncommon, are generally not recognized until the abdomen is opened. The symptoms indicating operation are those pointing to a severe injury of the abdominal contents, associated with signs of marked internal hemorrhage.

Berger¹ states that 51.8% of all cases of splenic rupture prove fatal from hemorrhage within the first hour.

On the other hand, in subcutaneous rupture of the spleen without a tear in the capsule itself, there may be no signs of hemorrhage, and the patient make an uneventful recovery without operation. Naturally, in such cases the diagnosis of rupture of the spleen cannot absolutely be made. A certain number of this class later come to operation for an infected hematoma within the capsule, or for cyst of the spleen. In these, the bleeding within the capsule must have been gradual and ceased entirely when the pressure within the capsule became sufficiently great to shut off the bleeding points. Occasionally, as in the case cited below, the bleeding within the unruptured capsule continues until the pressure becomes so great that the capsule can no longer hold. The latter then suddenly bursts and, with it, the peritoneal covering, setting free a large hematoma and allowing a profuse hemorrhage from the torn spleen into the general peritoneal cavity.

This accident may occur from a few hours up to several days following the trauma and is quite sure to be fatal unless surgical measures are quickly resorted to.

Male, Italian, age 34, teamster.

P. H. Not taken.

P. II. Not important except for fact that patient never had malaria.

P. I. Sept. 10, 1918, at about 10 A.M., was kicked by a horse, in the upper abdomen. Continued to work, loading and unloading coal wagon until noon when a fellow workman told him to stop as he did not look well. His only complaint was slight pain in the abdomen.

Patient walked into the office of Dr. E. J. Powers of Chelsea, about 2 P.M. The latter, as a precautionary measure, took the patient home and put him to bed. He also strapped his left

chest and gave codeine for what appeared to be a slight diaphragmatic pleurisy. There was nothing further found on examination except slight tenderness over the left upper abdomen. The pulse, temperature, and respiration were normal and remained so during the next few days. Patient remained in bed, without other symptoms, until September 13, when, without permission, he sat up to eat his dinner. On the morning of September 14, patient was seen by Dr. Powers who found him comfortable. About 11 P.M. on September 14, while lying on bed, patient suddenly felt "something give way" in the upper abdomen, and at once sent for Dr. Powers. The latter found the patient in a state of collapse, pulse 130, temperature 97, respiration 30. There was marked pallor and thirst. The abdomen was considerably distended with rigidity and spasm on the left side, especially on the upper half. There was also shifting dullness in the flanks.

The diagnosis of rupture of some viscus, with internal hemorrhage was made, and immediate operation advised.

Further examination made by me about midnight of September 14, at the Frost Hospital, revealed no further symptoms. Under ether, the abdomen was opened through a high left rectus incision. There was at once an escape of large amounts of old and fresh blood. Quick exploration revealed a ruptured spleen which was bleeding profusely. Splenectomy was done. Further exploration was negative. Two gauze drains were placed to the former site of the spleen and the wound closed in layers. At the end of the operation the patient's condition was poor. Transfusion of blood was considered but no donor could be obtained. Salt solution was given intravenously and the patient stimulated. His condition on the morning of September 15 was slightly improved. He refused to allow transfusion at this time. From then on his condition gradually failed and he died at 10 A.M., September 16.

Examination of the spleen, after removal, showed the capsule loosened from the surface as if it had been lifted by a slow extravasation of blood from beneath. The peritoneal covering, capsule and spleen itself were torn through the middle, in a line running from the hilus backward to the posterior aspect, practically dividing the organ into two pieces.

REFERENCE.

¹ Berger: *Archiv. klin. Chir.*, Jeviff, 865.

Selected Papers.

INFLUENZA.*

By JOHN SPEARES, M.B., B.Ch., CAPT., R.A.M.C.
DUBLIN, IRELAND.

Assistant Physician to the Adelaide Hospital, Dublin.

LOCAL outbreaks of influenza occurring during the past two years should have warned us of the approach of the present pandemic. One of the ablest workers at cerebro-spinal meningitis has stated that when the carriers of the meningococcus pass a certain point we have an epidemic of this disease. Perhaps this is applicable to influenza. It is 28 years since the last severe epidemic, and intervening years have been punctuated with sporadic outbreaks, which may have caused an increase in the number of carriers. The course followed by the disease seems to have been from west to east and not east to west, as formerly.

ETIOLOGY, ETC.

Influenza is extremely contagious, possibly the most contagious of all infections, and seems to attack the strong and the weak; old age alone seems to confer some degree of safety. Coughing, sneezing, etc., are the main spreading factors. Many workers are now agreed that the causative agent of this present pandemic is a bacillus similar to that described by Pfeiffer in 1892. The reasons mainly are:—(1) The remarkable prevalence of this bacillus in the sputa of sufferers as compared to healthy people; (2) the recovery of the bacillus from the blood, pleural effusions, etc., of cases clinically influenza.

While this is not a definitely established fact, yet the evidence in favor of the bacillus is on the increase. In the Howth epidemic, the bacillus was isolated from five cases of the first seven examined, and since then the examination of over 150 sputa showed bacilli present, morphologically indistinguishable from Pfeiffer's, and in all probability genuine influenza organisms. Several unsuccessful attempts to recover organisms from the blood have been made.

Incubation. The incubation period is about two days. This has been noted by many observers, and the onset has been, in many cases, remarkably sudden.

Types and Features. A pure influenza attack

may be followed by a secondary pneumonia, which was not caused by the influenza bacillus alone in the cases examined, but by a streptococcus or pneumococcus, and occasionally by other organisms.

Influenza is protean in its manifestations, and has been mainly of the respiratory type, with occasional instances of gastro-intestinal, nervous, and other types.

The striking features in many of the respiratory cases have been the presence of epistaxis and a tendency to hemorrhages of various kinds; toxemia, grossly irregular temperature, cyanosis, early excessive watery nasal discharge, albuminuria, etc.

POST-MORTEM EXAMINATIONS.

Autopsies were made in seven cases, with the following results:

Macroscopic. Lungs. Two of the cases had a definite recent extensive fibrinous pleural exudate on section.

Some cases showed extensive broncho-pneumonia simulating lobar; others showed definite areas of consolidation, nodular and peribronchial, especially in the right lower lobe, with a definite tendency to coalesce. Gray patches around the bronchioles, and intervening red areas, were seen. On squeezing, purulent material exuded from the bronchioles, especially in the solid areas. The bronchial mucous membrane was hyperemic, and coated with a mucopurulent exudate.

Spleens showed a congestion and friability in three of the cases.

Three *kidneys* showed acute nephritis; capsules peeled easily, cortices had a somewhat boiled appearance.

Hearts showed a flabby condition; three were dilated. Two cases showed patches of pericarditis of outer surface from contact with pleura of lung.

Livers, as a rule, were congested, and two showed a "nutmeg" appearance on section.

Microscopic. Lungs. The alveoli contained r.b.c., polymorphs; desquamated endothelial cells, which were round and swollen, also a serous exudate. Several of the cases showed hemorrhagic areas. The alveolar walls were greatly congested and oedematous, the endothelial cells were swollen, and frequently projected into the alveoli; in many fields it was difficult to make out the alveolar wall.

* Reprinted from the Medical Press of Jan. 1, 1919.

Bronchi. These showed a purulent exudate, desquamation, and hyperemia.

Three kidneys showed acute nephritis, mainly of tubular type. The cells lining the tubules were swollen, and the lumen contained albuminous material, and in three cases r.b.c. Congestion around the tubules was very marked, and was present to some degree in the glomeruli.

Liver. Hemorrhages were observed close to the surface, and there was marked general congestion.

In six cases streptococci were grown from lung cultures, also pneumococci in five cases, and in two cases a hemolyzing staphylococcus. One of the lung sections stained by Gram's method showed a most extraordinary number of streptococci.

IMMUNITY.

We have been taught that one attack of influenza does not confer any immunity, and that, on the contrary, many people suffer almost yearly from "flu" attacks. However, it is a remarkable fact that in Dublin, and in several of the country districts, it has been observed that those people who had a severe attack of influenza last July are not being attacked now. There are exceptions to this, it is true, but the fact remains that numbers of people seem to have acquired some degree of immunity, assuredly conferred on them by their July attack—possibly this immunity is of a transient nature, but at any rate it has lasted three months.

The periodicity of epidemics also tends to show that there is some degree of general immunity, which gets diluted in time by a new population of relatively low immunity. It must also be remembered that many attacks of catarrh are incorrectly termed influenza.

PROPHYLAXIS.

On the supposition that the July epidemic conferred some degree of immunity, and as prophylactic vaccines against catarrh have met with considerable success, it seemed reasonable to suppose that a vaccine made of *B. influenzae* should confer some degree of immunity if given in suitable doses. An attempt has been made to provide prophylactic treatment, which began on October 7. The reports received up to the present have been very favorable, and in many cases striking, but it is impossible to say definitely if the vaccine is protective or if it reduces the severity of the attack in inoculated people. However, the evidence tends to show that some

degree of immunity is acquired after two or more inoculations. The doses given have been: first dose, 25 millions; second dose, 40 millions, approximately.

It is fully determined that no unfavorable effects have followed the doses. A certain number of cases have contracted influenza within 36 hours after their first dose, and it is advisable that all who are inoculated should be warned not to expose themselves to infection for 24 hours at least.

Mixed vaccines of streptococcus, pneumococcus, etc., have been tried, but not on so extensive a scale in Ireland, as it seems more logical to try to prevent the primary influenzal attack, and it is difficult to regulate dosage and gauge resulting immunity when using a mixed vaccine. Rigid isolation has proved a most efficient prophylactic agent.

TREATMENT.

Calomel, oxygen, stimulants, salicylates, strychnine, etc., are, of course, widely used and known to everyone.

Vaccine treatment (*B. influenzae*) may be tried in early cases. Many observers are fully satisfied that the results are good. The doses should be small—10 to 15 millions first dose. Further experimental evidence is necessary, as credit may be wrongly given to a vaccine based on the fallacious argument, *post hoc, ergo propter hoc*.

When pneumonia has set in, pure influenza vaccine is certainly not indicated. The offending organism in the main is a streptococcus, and occasionally the pneumococcus. A mixed vaccine may be used, but there is not yet sufficient evidence to show that it is of any value. Serum treatment, especially for pneumococcal pneumonia, has been tried, with apparent success, in America, but not to any extent in Ireland. The serum of convalescents seems to be an efficient therapeutic agent, and this is an additional argument in favor of vaccine prophylaxis. Anti-streptococcal serum seems certainly to be indicated in many cases.

CONCLUSIONS.

1. That the mass of evidence shows that the present pandemic is caused by a bacillus which morphologically and culturally resembles Pfeiffer's.
2. That the fatal secondary pneumonia is caused mainly by a streptococcus hemolyticus.

which is frequently associated with hemorrhagic tendencies.

3. That there is conclusive evidence of acute nephritis and albuminuria in severe cases.

4. That probably a certain degree of immunity is conferred by prophylactic use of influenza vaccine, and that the use of the vaccine for this purpose is justifiable.

5. That further experiments, duly controlled, are necessary to establish the utility of influenza vaccine for prophylaxis and early treatment.

I am greatly indebted to the President for the opportunity he has given me to explain what work we have done up to the present; of course, it is premature yet to give detailed statistics.

Society Report.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SPECIAL MEETING, TUESDAY, NOVEMBER 5, 1918,
AT 8.30 P.M.

DR. THOMAS E. NELSON, Acting President, in the Chair.

THE SURGICAL TREATMENT OF WOUNDS OF THE LUNG.

MAJOR PIERRE DUVAL, Paris: In the last two years the treatment of lung wounds in the French Army has changed from the medical to the surgical. This surgical treatment consists in excising the lung wound and treating it as one would a wound in any other part of the body. The chest is opened widely enough to take the lung out; it is examined on all its surfaces; hemorrhage is checked, the lung replaced and the chest wall sutured completely. In the first half of the war in 300 cases of lung wounds treated medically there was a mortality of from 25 to 28 per cent. By the surgical treatment in cases brought in with severe hemorrhage there were good results in from 65 to 68 per cent. of all cases. By the operative treatment of war wounds of the lung the mortality has fallen from 28, to 9 per cent. The war experience in lung wounds has opened a broad field for lung surgery in time of peace.

GUNSHOT WOUNDS OF THE CHEST.

COLONEL GEORGE E. GASK, London: A very great change has come over the whole of our

treatment of gunshot wounds. At the beginning of the war we were horrified to find that every single wound was suppurating. Our efforts to get clean wounds were futile and it seemed as if we had returned to the pre-Listerian period. We now realize that the essential treatment of all gunshot wounds is the early mechanical cleansing by open operation under aseptic precautions before the organism introduced by the missile has a chance to multiply and invade the tissues. A broad line of distinction is drawn between contamination and infection. In the majority of cases operation is done within 12 or 15 hours of the time of injury. For the first two years of the war we were afraid to do any sort of operation on the chest. The men were put to bed, given morphia if in pain, a remedy for cough if there was cough, and we hoped they would get well. Quite a large number did, but a larger number died, and a large number became extremely septic, had empyema with pus discharge. The only surgery that was done was the removal of an inch or two of rib and a tube put in. Throughout the time of the Somme fighting we had not time to study these chest cases for the number of urgent operable cases was enormous. Gradually we found that we could divide the thoracic cases into two categories: Those dying on the battlefield or within a few hours, and those dying in from 48 hours to two or three weeks. Of the former class death was the result of hemorrhage; of the latter, usually death resulted from sepsis. Our next step was to find the channel of infection, and the great principle we arrived at was to affect an early mechanical cleansing of the wound of the chest wall and of the wound in the lung. Our method was to put the patient to bed, the chest being examined for complicating wounds, hemothorax, pneumothorax, movements of the diaphragm, position of the heart and for any indication of respiratory distress. X-ray examination was used whenever possible. Determining that the chest wall must be excised we cut down upon the rib or scapula, finding it necessary often to excise ragged splinters with a pair of scissors. Very often we found bleeding in the costal artery which we first thought came from the lung. This was tied. Inserting a finger there could be felt splinters of bone in the cavity or sticking into the lung. Such cases with the air sucking in and out were uniformly fatal. We later were led to enlarge the wound of entrance that the

hand might enter the thoracic cavity and remove foreign bodies. Rather to our astonishment the men stood these operations much better than we anticipated. There was banished forever the principle which I was taught to believe that handling the wounded lung would cause renewed bleeding. Upon opening the chest the blood is removed and search is made for foreign bodies, the lung is examined for foreign bodies as would be a coil of intestine. If the foreign body has penetrated into the lung a fresh incision may be required. This can be made without fear except near the hilus, and any bleeding is easily controlled by deep catgut sutures. The principle that a wound must be cleansed must be applied in wounds of the lungs as in any of the soft parts. As evidence of the fact that the lung is able to take care of many organisms without abscess formation, gas gangrene of the lung is unknown in spite of the many cases in which foreign bodies are left in the lung. It is, therefore, a matter of practice to close every wound in the lung. I fancy that restoration of function is accomplished much more quickly when the lung is at once put into as nearly normal condition as possible. Cleansing of the pleural cavity is of the utmost importance. The final step in the operation is closure of the chest and this is done as in closure of the abdomen when possible,—muscle to muscle, and skin to skin. An anesthetic may be given with safety if there is fair function on the side of the chest not opened. I think I may be right in saying that the type of anesthetic, as long as it is skilfully given, is not of very great importance. In the after treatment, the chest should be aspirated at regular intervals to determine that no infection is present. I would not give the impression that every chest wound should be operated upon. Probably not more than 30 per cent. of penetrating wounds of the chest should be subjected to operation. In our experience the indications for early operation are (1) Such wounds of the soft parts as would require operation in any other part of the body; (2) Bleeding from that wound; intracostal hemorrhage; (3) Fractured ribs; (4) Cases with large foreign bodies lodged in the lung; (5) Cases of pneumothorax in which air is admitted through the wound. In hemothorax without extensive wounds, splintered ribs, or retained bodies, there is at present diversity of opinion. While we are inclined to operation our practice is not to operate unless there is sign of sepsis. Theoretically

there should be no such state as an infected hemothorax, but practically there are a considerable number of such cases. We have no means of telling which cases will become septic. I believe that closure of the chest helps to expand the lung for every movement aids in this expansion as soon as the air is absorbed. If pus is formed a stitch may be easily removed and a tube inserted. The surgical treatment of wounds of the chest is now being practised in almost every hospital at the front line, and we have had the supreme pleasure of seeing many patients restored to health who would have died under the former treatment.

THE TREATMENT OF CHEST WOUNDS BY ARTIFICIAL PNEUMOTHORAX.

PROFESSOR RAFFAELE BASTIANELLI, Italy: In the Italian Army the treatment of chest wounds has followed almost the same steps as in the other Armies. Early in the summer of 1916 we saw the necessity of an active intervention, and we came to the conclusion that, except for a few puncture-like wounds, it was necessary to excise the soft parts and to remove the bone fragments, treating the chest wall in the same way as we had learned to treat wounds in any other part of the body, because we felt sure that much of the pleural infection causing empyema, septicemia and death was due to an infection coming from the outside. The chest wall was closed air-tight and without drainage, and generally this operation was performed under local anesthesia. It was through the untiring interest of one of my associates, Major Morelli, a pupil of Forlanini of Pavia, that the artificial pneumothorax was introduced into the Italian Army, leaving the complete chest operation for the treatment of exceptional cases. Some lung wounds are such that air is not admitted to the pleural cavity from the outside, neither can it escape, so that the hemothorax and the pneumothorax are in a closed thorax; and when here there are no adhesions generally we see that the hemorrhage is either fatal, or it is profuse, or moderate, or does not show at the beginning, but appears and is prolonged. This prolonged hemorrhage is due to the fact that inside the closed thorax there is the negative pressure of the lung which works like a suction cup on the lung wound. We have then two very bad conditions,—a movement of the wounded organ, and a suction on the wound itself. In many such cases of closed thorax wound Nature may effect

a perfect, or an imperfect cure. The mechanism of the cure by Nature is through the pressure exercised on the lung wound by the blood in the pleural cavity, by the air, or by both together. With 1500 or 2000 cc. of blood inside the pleural cavity the lung may still expand. The lung, collapsed and immovable, presents a favorable condition for healing. We have learned also that blood in the pleural cavity is dangerous not only as a medium for microorganisms but also in the formation of fibrous deposits which obliterate the sinuses of the pleura and produce adhesions; also its presence does not favor expansion of the other side of the chest. Instead, if the pleural cavity is filled with air, the lung is compressed, hemorrhage, infection, and adhesions are prevented more easily, and even the big missile inside the lung sometimes remains without complication if immobility is maintained. With blood in the pleural cavity the lung is usually only partly retracted and we see bad functional consequences. If the lung is surrounded completely by air, adhesions do not occur; and when the lung begins to expand, the pleura will not contract adhesions so quickly that the expansion is prevented. Adhesions may occur later, but then the lung has already expanded and the function is good. For these reasons we believe that there is advantage in removing the blood as completely as possible from the pleural cavity and in substituting air. We never see secondary hemorrhage. The current opinion that blood in the pleural cavity is efficient in checking hemorrhage is not true if in removing the blood we substitute air, inducing a positive pressure sufficient to cause collapse of the lung. We believe that in every case in which a lung wound is demonstrated, pneumothorax should be performed. We perform it also in cases of contusions of the lung which are apt to be followed by complications. Contraindications are evidenced when adhesions prevent the introduction of air or when the air escapes through a gap of the chest wall which could not be completely closed, or through the lung wound itself. But such contraindications are exceptional. The indications for complete operation in our practice are very limited, and when the chest is a closed one we believe that it should be performed exceptionally. While if the chest is open, and especially if the opening is large, naturally it is more often indicated to inspect and treat the lung wound. We have had no case in which we were obliged to resort to a

complete operation for hemorrhage. We believe the operation should be performed when a foreign body in the pleural cavity can be demonstrated. We believe that closure of the open chest should be made as promptly as possible and we found useful the introduction in the chest would of a small rubber bag which, when inflated, sealed completely the opening. These bags and the apparatus for performing the pneumothorax, devised by Major Morelli, will be shown by lantern slides. In 206 cases of lung wounds with closed chest treated by pneumothorax alone or by thoracentesis and pneumothorax there were seven deaths. Among the cured cases we saw only 22 complications. Of the open chest there were 84 cases with a mortality of 19 cases,—22 per cent. Of these 19, eight died in the first 14 hours. Of the 76 treated by pneumothorax after removal of the blood there was a mortality of 11 cases,—14½ per cent. There has been a great improvement in this series of open chest since my plan of suturing the chest wall air-tight instead of plugging permanently the gap with the rubber bag was systematically adopted. In 35 cases so treated we had two deaths. I think that these results compare favorably with any result in any other army by any other means of treatment.

SURGERY OF THE LUNGS.

COLONEL SIR THOMAS MYLES, Dublin: It must never be forgotten that the man with a bullet in his lungs has a bullet in two places,—in his lung, and also on his mind. It is to get rid of the bullet on his mind that the second operation is often undertaken. Sir Berkeley Moynihan believes that the mechanical effect of the bullet in the lung is in many cases comparatively small, while the effect upon the man's mind is very large. The only reliable method of examination is by the x-ray, and for the removal of the foreign body Sir Berkeley Moynihan finds that with few exceptions an incision at the level of the fourth rib offers an easy route of exit. The lung is to be handled as gently as possible in searching for the foreign body, and when located it is a simple matter to make an incision and extract it. A stitch is then inserted with a curved needle. It is of great importance not to encourage a too rapid inflation of the collapsed lung. It is of service to maintain a pneumothorax for a few days when necessary to break down adhesions.

LATER STAGES OF GUNSHOT WOUNDS OF THE LUNGS.

MAJOR G. GRAY TURNER, New Castle-on-Tyne: In the early stages of the present trouble it was not the custom to carry out any active surgical intervention, and the practice of the surgeons at the front reflected on the practice of those in the stations behind the battle line. As a consequence quite a number of cases suffering from penetrating wounds of the chest and with retained foreign bodies came to the base hospitals. About the middle of 1915 we determined to see if the men could not be relieved by active surgical methods. We found that many were suffering from incompletely absorbed hemothorax, some from neurasthenic symptoms, some from injury to the underlying lung. In a limited number of cases the foreign body in the lung gives rise to cough, hemoptysis, and symptoms suggestive of suppurative processes. We have found upon operation, band-like adhesions in the track of the bullet, the site of persistent infection, due possibly to the movement of the lung. The best results in gunshot wounds are obtained in those cases in which there has been a through and through wound. These men make a good recovery up to a certain point, but break down under the stress of military training. Upon opening some of these cases it is found that the blood is an organized clot. The lung is perfectly smooth as though encased in a sac. By splitting up the fibrous coating the lung is enabled to distend. A similar condition in the diaphragm is dealt with in the same way. The worst feature found upon opening the chest is that of adhesion of the base of the lung to the diaphragm. I am inclined to think that a certain amount of the disability here found is due to the hemorrhage and want of expansion of the lung for a considerable time. The lung becomes retracted and this position is not overcome by the respiratory exercise. It is not fair to speak of these operations as though they were to be lightly undertaken. The risk, however, is very small. Recovery depends upon the amount of damage done to the lung tissue at the time when the operation is undertaken. Sufficient time has not elapsed to say what the ultimate history of these cases will be. It is not enough to say that the patient can be returned to duty. We must know the condition months or years hence before we can speak with certainty. This is a branch of war surgery not yet sufficiently practised, but for which the time of development is ripe. The nearer to the battle front

can be brought our first line of surgical defense the better will be the results. The success of thoracic surgery in this war has been a very good demonstration that the general principles of surgery are true wherever applied.

American Medical Biographies.

FLETCHER, ROBERT (1823-1912).*

Robert Fletcher, one of the most eminent medical scholars and bibliographers of recent times, was born at Bristol, England, on March 6, 1823, where his father was a local attorney and accountant. After completing his preliminary studies, he was bred to the law. When he had spent two years in his father's office, he decided to study medicine, entered the Bristol Medical School in 1839, and completed his course at the London Hospital, becoming a member of the Royal College of Surgeons and a licentiate of the Society of Apothecaries in 1844. In 1843, he married Miss Hannah Howe, of Bristol, and wishing to try his fortunes in the new world, crossed the ocean with his young wife, and settled in Cincinnati, Ohio, in 1847. When the Civil War broke out, he became surgeon of the First Regiment of Ohio Volunteers (1861), and, after three years active service in the field, was commissioned surgeon, United States Volunteers, in charge of Hospital No. 7 at Nashville, Tenn., and became subsequently medical purveyor of the army at the same post, receiving, at the end of the war, the brevets of Lieutenant-Colonel and Colonel "for faithful and meritorious services." In 1871 he was transferred to the Provost Marshal's Bureau in the War Department at Washington, then in charge of Colonel Jedediah H. Baxter, United States Army, took an active part in the preparation of the two volumes of anthropometric statistics issued by that office (1875), and was the author of a treatise on anthropometry which prefaces this valuable work. In 1876, he became associated with Dr. John S. Billings in the Library of the Surgeon-General's Office, the nucleus of which, begun in Surgeon-General Lovell's time (prior to 1836), was a small collection of some three or four hundred books at the beginning of the Civil War, the library now containing upwards of half a million volumes and

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

pamphlets. In building up this great collection, Dr. Billings had early conceived the idea of printing a subject-index of the medical literature of the world, and, in 1876, he published a "Specimen Fasciculus of a Catalogue" of the Library, in effect a combined index of authors and subjects arranged in dictionary order in a single alphabet, which was submitted to the medical profession for criticism. A little later, Dr. Fletcher was assigned to duty in the Library and became the principal assistant in the redaction of the Index Catalogue, the first volume of which was printed in 1880. After the completion of the first series in 1895, Dr. Billings was retired from the army at his own request, becoming professor of hygiene in the University of Pennsylvania and subsequently director of the New York Public Library, and the redaction of the second series remained in charge of Dr. Fletcher. To this work Dr. Fletcher gave his rare scholarship and his extraordinary capacity for close and intensive proof-reading, and his labors were often carried, as Dr. Billings has said, "far beyond mere routine or the limits of office hours;" indeed, he continued to read the proof down to the beginning of his last illness. The *Index Medicus*, in which Dr. Billings and Dr. Fletcher were associated as editors, was begun as an extra-official publication in 1879, running through twenty-one volumes (1879-99). In 1903, it was revived, under the generous patronage of the Carnegie Institution of Washington, with Dr. Fletcher as editor-in-chief (1903-11).

During the years 1884-88, Dr. Fletcher was lecturer on medical jurisprudence at the Columbian University, Washington, D. C., and at the Johns Hopkins University from 1897 till 1903. He is described as a clear and attractive lecturer, very popular with his classes. He was president of the Anthropological, Philosophical and Literary Societies of Washington, as also of the Cosmos Club. Many honors were paid him in his later years, in particular the banquet given to him by leading members of the profession on January 11, 1906, and the unique award of the gold medal of the Royal College of Surgeons (1910), a distinction which had been conferred upon only eleven physicians in ninety years, most prominent of whom were Parkinson (1822), Thomas Beville Peacock (1876), Sir Richard Owen, (1883), Sir W. J. Erasmus Wilson (1884), Sir James Paget (1897), and Lord Lister (1897). He also received honorary medical degrees from Colum-

bian University (1884), and from his original *alma mater* at Bristol, which he was pleased to obtain only a few days before his death. During his later years, he was the oldest living graduate of the London Hospital.

Dr. Fletcher was vigorous and active up to the last two years of his life. A severe attack of diphtheria in the spring of 1911 brought on a condition of enfeebled health, which he bravely weathered, but to which he gradually succumbed, dying on the morning of November 8, 1912. He was buried at Arlington with the honors commensurate with the military rank he had attained.

Dr. Fletcher was survived by a daughter, who is the wife of General Leon A. Matile, United States Army, and by his son, Captain Robert H. Fletcher, United States Army (retired), whose charming literary productions are well known. Another son, Lieutenant Arthur H. Fletcher, United States Navy, (retired), died in 1911.

During his long life, Dr. Fletcher was the author of many interesting contributions to the literature of anthropology and the history of medicine, which may be listed in chronological order, as follows: On Prehistoric Trephining and Cranial Amulets (1882), Paul Broca and the French School of Anthropology (1882), Human Proportion in Art and Anthropometry (1883), A Study of Some Recent Experiments in Serpent Venom (1883), Tattooing among Civilized People (1883), Myths of the Robin Redbreast in Early English Poetry (1899), The Vigor and Expressiveness of Older English (1890), The New School of Criminal Anthropology (1891), the Poet—Is He Born, Not Made? (1893), Anatomy and Art (1895), Brief Memoirs of Colonel Garriek Mallery, United States Army (1895), Medical Lore in the Older English Dramatists and Poets (1895), The Witches' Pharmacopoeia (1896), Scopelism (1897), A Tragedy of the Great Plague of Milan in 1630 (1898), William Whitney Gooding (1900), A Rare Reprint of a Rare Work of Vesalius (1909), Columns of Infamy (1912), Diseases Bearing the Names of Saints (1912).

Of these, the monograph on "Prehistoric Trephining" (1882), the first handling of the subject in English, is a good example of his capacity for exhaustive research and directness of statement, containing everything known on the subject up to the time of its publication. As an instance, we may say that the cranial

mutilation which was first observed in prehistoric skulls by Manouvrier in 1895 and described by him as the "sineipital T," was already noted by Dr. Fletcher, in 1882 (p. 28), as a common practice among the natives of the Loyalty Islands, at first described by the Rev. Samuel Ella, an English missionary in 1874. The "Tragedy of the Great Plague at Milan" (1898) is a remarkable piece of synthetic work, the story having been developed *ab initio* from a rare old Italian engraving. The paper on "Medical Lore in the Older English Dramatists and Poets" (1895) is the most scholarly and thoroughgoing treatment of the subject in English, forming, as it were, a medical pendant to Charles Lamb's immortal "Specimens" from the Elizabethan poets. Dr. Fletcher had a wonderfully retentive memory for poetic citations, often quoting the most recondite things offhand, and his papers on the poetry of his native land were perhaps those dearest to his heart. He was especially interested in bird lore, and he selected most of the poetic mottoes descriptive of birds in the Smithsonian Institute. It had been his cherished intention to enlarge his essay on the Robin Redbreast with the valuable material which he had collected through many years, and it is hoped that this paper will some day appear in extended form.

Up to the time of his last illness, Dr. Fletcher maintained a most active interest in recent advances in medicine and in scientific and secular literature. He read most modern books that were worth reading, and commented freely upon them. As he had a definite contempt for weakness of character and mental ineptitude, he thought but little of the muddle logic, the sentimental glorification of crime, which disfigures the writings of Nietzsche and his school. On being shown a portrait of the unfortunate Nietzsche, with the Cr6-Magnon jaw and "eyes of a trapped wolf," he handed back the picture with the brief humorous comment: "Hardly the sort of man one would care to meet in the traditional dark lane on a rainy night."

In person, Dr. Fletcher was the tall, dignified, stately and *distingué* gentleman of the old school, much respected by old and young alike for his cheerful stoicism and military promptitude, his ready wit and courtly ways. In the relations of private life, he was most kindly and generous, even with little children, who always liked him. An Englishman, *de race*, he had the Saxon's strength of hand and independence of

the Western men, did not need his war-time experiences in the field to acquire a stoical disregard for pain and a fine sense of duty and loyalty. "He had," says Sir William Osler, "a rare gift for friendship. . . and all his colleagues at the Johns Hopkins Hospital were devoted to him. After his Jurisprudence lecture at the Johns Hopkins Hospital, at the hospitable board of the Director, Dr. Hurd, many of us would gather, delighted to hear of Dr. Fletcher's reminiscences of the profession, which went back to the forties. He had met Sir Astley Cooper, and he knew well the famous old men of the Bristol School, and could tell tales of the Middle West in the palmy days of Drake and Dudley and Caldwell. It was a rare treat to dine with him quietly at his club in Washington. He knew his Brillat-Savarin well, and could order a dinner that would have made the mouth of Coelius Apicius water."

The profession lost in Dr. Fletcher an accomplished scholar, whose work will be esteemed as long as medical bibliography is of importance; his friends and intimates miss one high-minded, honorable gentleman, one staunch and loyal friend.

FIELDING H. GARRISON, M.D.

Book Review.

Diseases of Infancy and Childhood. By HENRY KOPLIK, M.D. (Fourth Edition.) Philadelphia and New York: Lea & Febiger. 1918

The third edition of this well-known book appeared in 1910. Many advances have been made in pediatrics since that time. These have been incorporated in this, the fourth edition, which is better even than the third, which was itself far superior to the two earlier editions. This edition, like the others, bears the stamp of the author's individuality. It is not simply a compilation of the views of others, but the expression of his own opinions and beliefs. It shows clearly how wide the author's clinical experience has been and what good use he has made of it. It would be easy, of course, to take exceptions to many minor points and to criticize many of the statements which are made. In general, however, nothing can be said of the text except in approval. The book should be of great value in the future, as in the past, to both students and practitioners.

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NURSES' REGISTRATION BILL.

FROM time to time it has been the custom of the JOURNAL to acquaint its readers with current legislation regarding the registration of nurses. This year an amendment to the nurses' bill is to come before the Legislature which provides: first, that nurses who shall be eligible to take the examinations must be graduates of a school approved by the Board; second, that all people who are to take care of the sick for pay, and who are not registered nurses, must have a license to practice as attendants; third, all attendants and nurses shall renew their licenses or registration annually. It will be seen that as a means of keeping track of the nursing resources of the state this amendment makes provision for emergency. Census taking never seems to give an accurate result and by making registration a mandatory law we shall know what we have to depend upon in sudden need. Formerly, it was not even necessary that candidates

for examination should be graduates of any training school and consequently at times women who for incompetency or misconduct had been discharged from a training school were, nevertheless, eligible for examination. However, a generous waiver will have to be made for the next year in order properly to include all people who have not registered previously, and who have graduated more than five years ago.

Following is a copy of a proposed act amending the Present law relating to the registration of nurses:

AN ACT TO AMEND THE LAW RELATIVE TO THE REGISTRATION OF NURSES.

Section 1.

Section three of chapter four hundred forty-nine of the acts of the year nineteen hundred and ten is hereby amended by inserting after the word "character" in the ninth line, the words,—and a graduate of a training school for nurses approved by the board,—and by inserting after the word "fee" in the seventeenth line the words,—every person registered as a nurse or licensed attendant under this act shall, on or before the thirty-first day of December in each year, renew his or her registration or license for the ensuing year by payment of a fee of fifty cents to the board, and upon payment of the said fee it shall be the duty of the board to issue a voucher which shall show that the holder thereof is entitled to practice as a registered nurse or licensed attendant for the period of time covered by the said fee. Any person registered under this act as a registered nurse or licensed attendant who, in any year fails at the required time to renew his or her right to continue in the practice of nursing for hire by payment of the said annual fee, shall forfeit his or her right to practice until such payment shall have been made, but any person whose right has been forfeited by failure to pay the required fee of fifty cents, may make application for the restoration of his or her right, and upon payment of the required fee of fifty cents his or her petition may be granted; but such payment shall only authorize said applicant to practice nursing for the balance of the year for which the said payment should have been made,—and by inserting after the word "any" in the eighteenth line, the word,—registered,—and by inserting after the word "nurse" in the said eighteenth line, the words,—or licensed attendant,—and by inserting after the word "a" in the twentieth line, the word,—registered,—and by inserting after the word "nurse" in the said twentieth line, the words,—or a licensed attendant,—so as to read as follows:

Section 3. It shall be the duty of the said board, immediately upon its organization, to notify all persons engaged in the practice of nursing the sick of this commonwealth of the times, places and subjects of the examinations for registration, by publication in one or more newspapers in each county. Application for registration shall be made upon blanks to be furnished by the board, and shall be signed and sworn to by the applicants. An applicant for registration who shall furnish satisfactory proof that he or she is at least twenty-one years of age, and of good moral character and a graduate of a training school for nurses approved by the board, shall, upon the payment of a fee of five dollars, be examined by the said board, and, if found to be qualified, shall be registered, with the right to use the title Registered Nurse, and shall receive a certificate thereof from the board signed by the chairman and secretary. An applicant who fails to pass an examination

satisfactory to the board, and is therefore refused registration, shall be entitled, within one year after such refusal, to a re-examination at a meeting of the board called for the examination of applicants, without the payment of an additional fee. Every person registered as a nurse or licensed attendant under this act shall, on or before the thirty-first day of December in each year, renew his or her registration or license for the ensuing year by payment of a fee of fifty cents to the board, and upon payment of the said fee it shall be the duty of the board to issue a voucher which shall show that the holder thereof is entitled to practice as a registered nurse or licensed attendant for the period of time covered by the said fee. Any person registered under this act as a registered nurse or licensed attendant who, in any year fails at the required time to renew his or her right to continue in the practice of nursing for hire by payment of the said annual fee, shall forfeit his or her right to practice until such payment shall have been made; but any person whose right has been forfeited by failure to pay the required fee of fifty cents may make application for the restoration of his or her right, and upon payment of the required fee of fifty cents, his or her petition may be granted; but such payment shall only authorize the said applicant to practice nursing for the balance of the year for which the said payment should have been made. The said board may, after a hearing, by vote of a majority of its members, annul the registration and cancel the certificate of any registered nurse or licensed attendant; and without a hearing, may annul the registration and cancel the certificate of a registered nurse or licensed attendant who has been found guilty of a crime or misdemeanor. All fees received by the board shall once a month be paid into the treasury of the commonwealth.

Section 2. Section five of chapter four hundred forty-nine of the acts of the year nineteen hundred and ten is hereby amended by inserting after the word "shall" in the first line, the words,—have graduated at least five years previous to the passage of this act from a training school for nurses approved by the board, who shall,—and by striking out all the words after the word "she" in the fourth line, down to and including the word "school" in the sixth line, and inserting in place thereof, the words,—has had such experience,—and by inserting after the word "dollars" in the eighth line, the following,—any person in this commonwealth who is engaged in caring for the sick for hire, and who is not already registered under the provisions of chapter four hundred forty-nine of the acts of the year nineteen hundred and ten, or who is not entitled to registration under the provisions of section one of this act, or under the preceding provisions of this section, shall be required to file with the board upon blanks to be furnished by the board, satisfactory proof that he or she is of good moral character, and upon payment of a fee of fifty cents a certificate shall be issued to the applicant, signed by the secretary, which shall provide that the holder thereof is authorized to practice under the title "Licensed Attendant." In case of emergency the board may at its discretion waive temporarily the requirement of registration or issuing of licenses for those who are needed to care for the sick for hire,—so as to read as follows:

Section 5. Any resident of this commonwealth, who shall have graduated at least five years previous to the passage of this act from a training school for nurses approved by the board, who shall make application for registration within one year after the passage of this act, and who shall prove to the satisfaction of the board, by affidavit or otherwise, that he or she has had such experience as in the opinion of the board would justify registration, shall be registered without examination on the payment of a fee of five dollars. Any person in this commonwealth who is engaged in caring for the sick for hire, and who is not already registered under the provisions of

chapter four hundred forty-nine of the acts of the year nineteen hundred and ten, or who is not entitled to registration under the provisions of section one of this act, or under the preceding provisions of this section, shall be required to file with the board upon blanks to be furnished by the board, satisfactory proof that he or she is of good moral character, and upon payment of a fee of fifty cents a certificate shall be issued to the applicant, signed by the secretary, which shall provide that the holder thereof is authorized to practice under the title "Licensed Attendant." In case of emergency the board may at its discretion waive temporarily the requirement of registration or issuing of licenses for those who are needed to care for the sick for hire.

Section 3. Section ten of chapter four hundred forty-nine of the acts of the year nineteen hundred and ten is hereby amended by inserting after the word "nurse" in the second line, the words,—or licensed attendant,—and by inserting after the word "nurse" in the third line, the words,—or licensed attendant,—and by inserting after the letters "R.N." in the third line, the words,—or licensed attendant,—and by inserting after the word "registered" in the seventh line, the words,—by fraud,—and by inserting after the word "nurse" in the eighth line, the words,—or licensed attendant,—so as to read as follows:

Section 10. Whoever not being lawfully authorized to practice as a registered nurse or licensed attendant within this commonwealth practices or attempts to practice as a registered nurse or licensed attendant, or uses the abbreviation R.N. or the words licensed attendant, or any other words, letters or figures to indicate that the person using the same is a registered nurse or licensed attendant shall for each offence be punished by a fine of not more than one hundred dollars. Whoever becomes registered or attempts to become registered by fraud, or whoever practices or attempts to practice as a registered nurse or licensed attendant under a false or assumed name, shall for each offence be punished by a fine of not less than one hundred or more than five hundred dollars, or by imprisonment for three months or by both such fine and imprisonment.

Section 4. Section eleven of chapter four hundred forty-nine of the acts of the year nineteen hundred and ten is hereby amended by striking out all the words of the section after the word "family" in the second line, so as to read as follows:

Section 11. This act shall not apply to gratuitous nursing of the sick by friends or members of the family.

Section 5. This act shall take effect upon its passage.

RETURN OF HARVARD SURGICAL UNIT.

AFTER nearly four years of valuable service abroad, the Harvard Surgical Unit returned to Boston on January 30. After leaving France on January 7, the unit went to England, and was entertained in London, where several members of the unit were honored for their distinguished service. Lieutenant Colonel Hugh Cabot, chief surgeon and commander of the hospital, was made companion of the Order of St. Michael and St. George, and Captain Edward Harding, of Boston, received the Military Cross. The Royal Red Cross was awarded to the chief matron of the hospital, Mrs. Katharine Hagar, and to several of the nurses. Honorary commis-

sions in the Royal Army Medical Corps were given to all the members of the unit.

The work of the unit in France may be summarized briefly as follows:

"Something over 150,000 casualties have passed through to 22 General Hospital, up to Dec. 1, 1918. This is a greater number than the total reported wounded of the American Army in France.

"It was the policy of this hospital never to refuse to take a patient, and though the accommodations were often overstretched, the unit always found room for more.

"At one time during the German offensive of March, 1918, the hospital took in over 1200 patients in 24 hours and had in the hospital at that time over 3000."

The first contingent, headed by Dr. E. H. Nichols, and including 31 other surgeons and 75 nurses, went overseas in June, 1915, and took charge of British General Hospital No. 22, at Camiers. Since then replacements in membership have made it necessary to provide in all a force of between 400 and 500 surgeons and nurses. At different times, Dr. E. H. Nichols, Dr. David Cheever, Dr. Harvey Cushing, and Dr. Daniel F. Jones were at the head of the unit. But for the greater part of its life the unit has been under the leadership of Dr. Hugh Cabot as chief surgeon. Lieutenant Colonel Herbert H. White was the business administrator of the unit; Mrs. Katharine Hagar, of Wellesley, served as chief matron of the hospital.

The first official recognition of the return of the Harvard Surgical Unit was made at the Harvard Club of Boston on the evening of February 4, when a dinner was given to the members of the unit by the overseers of Harvard College, the directors of the Harvard Alumni Association, the Harvard Club, and those who have contributed to the support of the unit. President Lowell presided, and Henry Babington Smith, K.C.B., and Lieutenant Colonel Hugh Cabot were the principal speakers.

We are glad to welcome home the members of the Harvard Surgical Unit, which has rendered to humanity an unselfish service of the highest character.

VENEREAL DISEASE CONTROL IN MASSACHUSETTS.

THE accompanying diagram is presented by the State Department of Health as illustrative

of the progress of the reporting of gonorrhoea and syphilis in Massachusetts from the time the new regulations went into effect, Feb. 1st, 1918, to Nov. 1st, 1918. It may well be borne in mind that reporting was not in active operation until several weeks later.

	<div>GONORRHOEA</div>	<div>SYPHILIS</div>	<div>TOTAL</div>
February	47	16	63
March	982	376	1358
April	835	415	1250
May	787	334	1121
June	815	330	1145
July	750	285	1035
August	828	360	1188
September	669	298	967
October	552	223	785
November	771	365	1136
	7036	3012	10048

These figures bespeak the earnest coöperation of the members of the profession as a whole, though much remains to be accomplished before figures can be presented which will indicate with any degree of accuracy the prevalence of these diseases in our state. It may be well to bear in mind in relation to the Boston figures the fact that the larger clinics draw from a wide field, in some cases embracing all of New England.

A peculiar responsibility was thrown upon the shoulders of the medical profession when the decision was reached that syphilis and gonorrhoea should be made reportable by number only, the name of the patient becoming known only when he lapses treatment. It is the physician alone who holds the secret of the comings and goings of these carriers of disease; consequently it is to him that we must look for the close follow-up which alone can make this system a success,—and success it is proving to be in spite of some difficult points. Each individual physician can make it a bigger success and a greater boon to humanity at large by following every case which comes to his attention until he is satisfied that it is no longer a source of danger to the community. Failing in this the State Department is prepared to take up the trial where the practitioner has lost it. Attention is invited to Section 9 of the Regulations which permits *immediate* report by name when advisable in the estimation of the physician.

State approved and subsidized clinics are being established in twelve cities selected at some pains with a view to their accessibility. Those already in operation are indicated on the following list:—

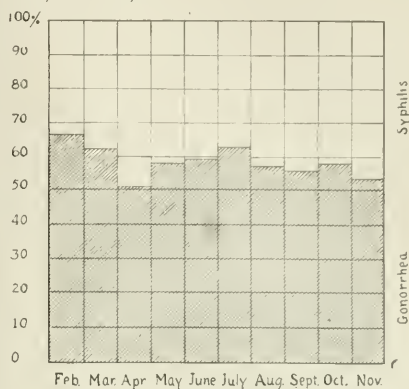
Boston	Massachusetts General Hospital
	Boston Dispensary
	Mass. Homeopathic Hospital
	Boston City Hospital
Brockton	Brockton City Hospital
Fall River	Fall River City Hospital
Lawrence	Board of Health Clinics
Lowell	Corporation Hospital
Lynn	Lynn Hospital
Pittsfield	House of Mercy Hospital
Worcester	Worcester City Hospital
Fitchburg	
Attleborough	
New Bedford	
Springfield	
Holyoke	

Arsphenamine, manufactured in the State Laboratories, is available for all these clinics in amounts for the present limited to the treatment of infectious cases of syphilis, and in all free treatment (when conditions warrant) can be secured for gonorrhoea or syphilis, or both, in either sex. Evening pay clinics are available in several. To meet a demand for night examination, with special reference to Court cases, the Massachusetts Homeopathic Hospital has provided facilities in connection with its Venereal Ward recently opened for the accommodation of house cases in women.

Physicians are urged to foster the growth of these Clinics in the interests of economy and efficiency as well as for the broader purpose of creating through them centers for public health work.

The State Laboratories are available for diagnostic purposes without cost. The Wassermann

MASSACHUSETTS—PER CENT. OF SYPHILIS AND GONORRHEA AS SHOWN BY CASES REPORTED FROM FEB. 1, 1918, TO DEC. 1, 1918.

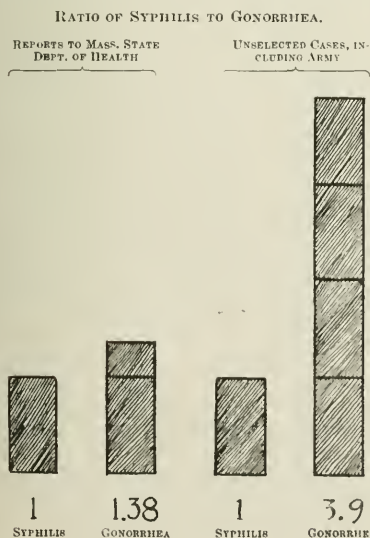


Laboratories, located at the Harvard Medical School, are prepared to make Wassermann tests upon receipt of specimens, while smears will be examined at the State Department Bacteriological Laboratories. Containers will be supplied upon request.

MEDICAL NOTES.

ROYAL MEDICAL COLLEGE OF BANGKOK.—Dr. A. G. Ellis, associate professor of pathology at Jefferson Medical College, will proceed to Siam to organize the department of pathology in the Royal Medical College at Bangkok. The exact date of his departure has not been determined, and is contingent upon the return of Dr. W. M. L. Coplin, professor of pathology, who is with the American Expeditionary Forces in France, having charge of the organization of the hospital laboratories.

PROMOTION OF DR. SHOEMAKER.—Dr. William T. Shoemaker, of Philadelphia, in recognition of his services as ophthalmologist of Base Hospital Unit No. 10, from the Pennsylvania Hospital, which he accompanied to France in May, 1917, has been appointed ophthalmologist to all American hospitals in England, and recently left France to enter upon his new duties. The new appointment carries with it the rank of lieutenant colonel, and he has been recommended for the promotion.



ESTABLISHMENT OF NEW JOURNAL OF NEUROLOGY.—At the session of the American Medical Association last June, a petition signed by a large number of the leading neurologists and psychiatrists of the United States and Canada was presented to the board of trustees, asking that the Association publish a journal to be devoted to nervous and mental diseases, on a plan similar to that on which the *Archives of Internal Medicine* and the *American Journal of Diseases of Children* are published. The board held the matter under advisement until its October meeting, at which time it acted favorably on the petition, and authorized the publication of such a journal. The journal will be known as the *Archives of Neurology and Psychiatry*. The following were appointed as the editorial board: Dr. Pearee Bailey, New York, adjunct professor and assistant professor of neurology at Columbia University College of Physicians and Surgeons, New York; Dr. Augustus Hoch, now of Montecito, Calif., formerly professor of clinical medicine, department of psycho-pathology at Cornell University Medical College; Dr. Hugh T. Patrick, Chicago, clinical professor of nervous and mental diseases, Northwestern University Medical School; Dr. E. E. Southard, Boston, professor of neurology, Medical School of Harvard University; Dr. Frederick Tilney, professor of neurology, Columbia University College of Physicians and Surgeons, New York; Dr. T. H. Weisenburg, Philadelphia, professor of neuro-pathology and clinical neurology, University of Pennsylvania School of Medicine.

APPOINTMENT OF DR. MARTIN.—Dr. Edward Martin, major in the Medical Reserve Corps and stationed at a camp in Georgia, has been elected emeritus professor of surgical physiology at the University of Pennsylvania.

HONOR FOR MAJOR GENERAL WILLIAM C. GORGAS.—Major General William C. Gorgas, former Surgeon General of the United States Army, has been made a grand officer of the Order of the Crown of Italy, in recognition of his distinguished service in behalf of military sanitation. The order was presented by Major General Emilio Guglielmotti, military attaché of the Royal Italian Embassy. The presentation ceremony took place in the office of the Surgeon General on November 5.

RESIGNATION OF PROFESSOR NELLIS B. FOSTER.—Professor Nellis B. Foster, Lieutenant Colonel in the Medical Corps of the United States Army, has resigned as professor of medicine and dean of the school of medicine of the University of Michigan, because he expects that military duties will detain him for an indefinite period.

RESIGNATION OF DR. L. BAUMANN.—The resignation of Dr. L. Baumann, assistant professor and director of research in the department of internal medicine of the University of Iowa, will take effect at the end of the present college year.

FRENCH TITLE FOR DR. SIMON FLEXNER.—Dr. Simon Flexner, director of the Laboratories of the Rockefeller Institute for Medical Research, has been honored by the French Government. He has been elected a corresponding member of the Société des Hôpitaux de Paris, and the title of Officier de Légion d'Honneur has been conferred upon him.

RETURN OF BRIGADIER GENERAL WILLIAM S. THAYER.—Brigadier General William S. Thayer will return from his service in France within a few days, and will resume his duties as professor of medicine of the Johns Hopkins Medical School. Dr. Thayer will succeed Dr. Theodore C. Janeway, who died several months ago while serving on the staff of the Surgeon General.

RED CROSS CENSUS OF NURSES.—At the request of the Secretary of War and the Surgeon General of the Army, the American Red Cross has undertaken to survey the nursing resources of the country. In New England, February 1 to February 8 constituted "Nursing Survey Week." Nurses are requested to fill out questionnaires and forward them to local chapters of the Red Cross. No obligation of service is involved. It is especially desirable that the following persons register their names and qualifications: graduate and undergraduate nurses, trained attendants, practical nurses, pupil nurses, midwives, and everyone who has taken a Red Cross course.

REQUESTS FOR MEDICAL RESEARCH.—By the will of Captain Joseph Raphael De Lamar, approximately \$20,000,000 has been left to the Harvard University Medical School, Johns Hopkins University, and the College of Physicians and Surgeons of Columbia University, for medi-

cal research into the cause of disease and into the principles of correct living. The following clause describes the purposes for which this money is to be used:

"For the study and teaching of the origin of human disease and the prevention thereof; for the study and teaching of dietetics and of the effect of different food and diets on the human system, and how to conserve health by proper food and diet, and in connection with the foregoing purposes to establish and maintain fellowships, instructorships, scholarships and professorships; to construct, maintain and equip laboratories, clinics, dispensaries and other places for such study and research and to provide proper housing of same; to publish and disseminate the results of such study and research, not only in scientific journals and for physicians and scientists, but also, and this I especially enjoin on the legates, by popular publications, public lectures, and other appropriate methods to give to the people of the United States generally the knowledge concerning the prevention of sickness and disease, and also concerning the conservation of health by proper food and diet."

COMMISSION FOR STUDY OF INFLUENZA.—A commission to study and report on the cause, prevention, and treatment of influenza has been appointed by Governor Whitman of New York. It is hoped that the scientific information which has been collected by the New York State Department of Health and other sources may be correlated and made available to health officials and to the medical profession. Among those who have been invited to serve on this commission are the surgeon generals of the United States Army, Navy, and Public Health Service, Dr. Rufus Cole, Dr. Walter B. James, president of the Academy of Medicine, New York City; Dr. Hermann M. Biggs, New York state commissioner of health, and Professor William H. Park, director of the Research Laboratories, New York City, Department of Health.

VETERINARY RECONSTRUCTION COMMITTEE.—A committee of five from the United States and one of three from Canada have been appointed by the American Veterinary Medical Association to assist in the war departments of the two countries and to help solve veterinary reconstruction problems.

MEDICAL STUDENTS IN SWITZERLAND.—During the summer semester of 1918, there were enrolled

in the five universities of Switzerland 1,725 students of medicine, distributed as follows: Bâle, 220 (174 Swiss, of whom 15 were women, and 46 foreign, of whom 4 were women); Berne, 385 (242 Swiss, of whom 29 were women, and 143 foreign, of whom 16 were women); Geneva, 381 (163 Swiss, of whom 16 were women, and 218 foreign, of whom 58 were women); Lausanne, 225 (159 Swiss, of whom 13 were women, and 66 foreign, of whom 16 were women); Zurich, 504 (350 Swiss, of whom 56 were women, and 154 foreign, of whom 16 were women).

AN INTER-ALLIED FELLOWSHIP OF MEDICINE.—At a meeting of the Royal Society of Medicine on December 4, the desirability of forming an association for promoting the coöperation in medicine among English-speaking countries, but not limited to them, was considered. In a recent issue of *Science* there is printed a report of Mr. J. Y. W. MacAlister, in which he expresses the belief that the coming together of medical men from America and all parts of the British Dominions should be utilized to organize some form of permanent organization which would result in a closer union between the English-speaking peoples through the medium of the medical profession.

A circular stating the aims of such an association was prepared and sent to the leading members of the medical profession in England, Canada, and the United States, and was cordially received. It was then issued to a wider public and many gratifying and encouraging letters were received. The question of finance has hindered practical progress, but it is believed that if a definite and approved scheme is prepared, it may be possible to obtain financial assistance from private persons.

UNITED STATES BIRTH STATISTICS FOR 1916.—In a recent issue of *Science*, the following birth statistics have been published:

In the recently established birth-registration area of the United States—comprising the six New England States, New York, Pennsylvania, Maryland, Michigan, Minnesota, and the District of Columbia, with an estimated population of 33,000,000, or about 32 per cent. of the total population of the United States—\$18,983 infants were born alive in 1916, representing a birth rate of 24.8 per 1,000 of population. The total number of deaths in the same area was 486,682, or 14.7 per 1,000. The births thus exceeded the

deaths by more than 68 per cent. The mortality rate for infants under one year of age averaged 101 per 1,000 living births. The infant-mortality rates vary greatly for the two sexes and for the various nationalities.

The birth rate for the entire registration area fell below that for 1915 by one tenth of 1 per 1,000 population; while the death rate exceeded that for 1915 by seven tenths of 1 per 1,000. The excess of the birth rate over the death rate for 1916, 10.1 per 1,000, was thus a little less than the corresponding excess for 1915, which was 10.9 per 1,000.

Of the total number of births reported, 799,817, or 24.9 per 1,000, were of white infants, and 19,166, or 22.8 per 1,000, were of colored infants. The death rates for the two elements of the population were 14.5 and 24.4 per 1,000, respectively. The number of children born to white foreign-born mothers exceeded the number born to native white mothers.

AMERICAN RED CROSS TUBERCULOSIS UNIT FOR ITALY.—The second contingent of the American Red Cross Tuberculosis Department, of which Miss Mary Thornton Davis and Miss Ethel Nichols of Boston, are members, has arrived in Rome.

Miss Davis, Miss Nichols, and the other members of the party, numbering 18 social service and public health experts, made the trip by way of Genoa. Miss Davis and Miss Nichols, who belong to the Instructive District Nurses' Association in Boston, have been assigned to the nurses' staff and will begin work in Genoa at once.

Other Bostonians, who came with the first party in October, are Seymour H. Stone, field secretary, Miss Isabel Hall, public health nurse, and Morgan H. Stafford, assistant business manager.

A survey of health conditions throughout Italy has just been completed by this Department. A train of American-made automobile dispensaries will be put into operation in the northern provinces.

SOCIÉTÉ MÉDICALE DES HÔPITAUX DE PARIS.—The Société Médicale des Hôpitaux de Paris elected at a recent meeting, as corresponding members: Dr. Alexander Lambert, the president-elect of the American Medical Association, director of the medical service of the American Red Cross in France; Colonel James T. Case,

editor of the *American Journal of Radiology* and chief of the radiologic service of the American Army in France; Professor William S. Thayer of Johns Hopkins, consultant to the American Expeditionary Force; Professor Morton Prince of Tufts College; Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, and Professor Beverley Robinson of the University and Bellevue Hospital, New York, a former intern of the Paris hospitals. At the same time, five British physicians were also elected: Sir Almoth Wright, Sir Bertrand Dawson, Sir Thomas Barlow, Sir Dyce Duckworth and Sir William Leishman.

MEDICAL COLLEGES IN MILITARY ZONE.—Medical colleges have been organized in the military zone in France to be attended by military men and to teach military medicine. One of these colleges will be near Rheims where there are already 3,000 beds and 70 students. The curriculum comprises surgery, medicine, histology, and medical physics.

MEDICAL COLLEGE IN PEKING, CHINA.—The medical college in Peking, China, under the auspices of the Rockefeller Foundation, which is now under construction, will cost \$6,000,000, and will be open in 1920. Eighteen university buildings, forty faculty residences, and a hospital with 200 beds will be constructed. A medical school will also be established at Shanghai and subsidiary medical stations will be established throughout China. Subsidies will be granted to existing missionary hospitals which will be standardized and will offer internships for the university. The work will require a total expenditure of \$10,000,000 with an additional \$250,000 to \$500,000 annually for support.

OFFICERS OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The officers of the American Public Health Association elected at the Chicago meeting are: President, Lee K. Frankel, New York City; Vice-presidents, Colonel John W. S. McCullough, Toronto, Ontario; Colonel Victor C. Vaughan, Ann Arbor, Mich.; and Dr. John D. Robertson, Chicago; Secretary, A. W. Hedrick, Boston; Treasurer, Dr. Guilford H. Sumner, Des Moines, Iowa, and Executive Committee, Drs. Allan J. McLaughlin, U.S.P.H.S., Washington, D. C.; Charles J. C. O. Hastings, Toronto; Peter H. Bryce, Ottawa; John N. Hurty, Indianapolis, Ind., and William C. Woodward, Boston. The Association will meet next year in New Orleans.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending February 1, 1919, the number of deaths reported was 291, against 262 last year, with a rate of 19.05, against 17.42 last year. There were 31 deaths under one year of age, against 32 last year.

The number of cases of principal reportable diseases were: diphtheria, 53; scarlet fever, 44; measles, 8; whooping cough, 12; typhoid fever, 3; tuberculosis, 47.

Included in the above were the following cases of non-residents: diphtheria, 5; scarlet fever, 10; tuberculosis, 4.

Total deaths from these diseases were: whooping cough, 1; tuberculosis, 16.

Influenza cases, 501; non-residents, 0. Influenza deaths, 73; non-residents, 13.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—On January 29, 94 new cases of influenza and 11 of pneumonia with 15 deaths from influenza and 10 from pneumonia were reported in Boston. These figures indicate a decrease in the number of deaths, and a slight increase in the cases reported.

On January 30, 77 new influenza cases with 11 deaths and 9 cases of pneumonia with 4 deaths were reported to the Boston Health Department.

On January 31, 63 cases of influenza and nine of pneumonia, with 10 deaths from influenza and 6 from pneumonia, were reported to the Boston Health Department. On February 1 there were reported 60 cases of influenza and 10 of pneumonia, with 3 deaths from influenza and 2 from pneumonia.

For the week ending on February 1, 501 cases of influenza were reported, against 932 for the previous week. There were 73 deaths, compared with 117 for the preceding week.

In Blackstone, there are nearly 150 cases of influenza or severe colds, and the schools have been closed.

CITY HOSPITAL UNIT.—It is expected that the City Hospital unit, which served in the war as Base Hospital No. 7, will return to America next month. The unit, organized by Lieut.-Col. John J. Dowling, Superintendent of the City Hospital, went overseas in July, 1918. Its personnel of 24 doctors, 100 nurses, and 200 enlisted men, is almost wholly from Greater Boston.

FUND FOR STUDY OF INFLUENZA.—The trustees of the Boston City Hospital have asked Mayor Peters for a special appropriation, not to exceed \$3000, for the study of the treatment of influenza. The need of scientific study of this disease is recognized. The City Hospital receives so many patients that the opportunities for study at this hospital are unusually great. Dr. Sears of the City Hospital, is reported to have said:

"The apparently successful results obtained at the Naval Hospital in Chelsea, by the use of serum from convalescent patients, have raised the hopes of the medical profession and the community that an effective treatment of influenza-pneumonia has been found, but the figures on which their results have been based have been too few for final judgment. Its value can be determined only after it has been used in a large number of cases under careful observation and study, and subject to critical analysis. The excessive mortality rate, which no other method of treatment has so far influenced, appears to the trustees to justify them in making this request for a special appropriation in the hope that more of the unfortunate victims of the present plague may be saved."

INFLUENZA TESTS AT GALLOP'S ISLAND.—As a continuation of tests made in California and Boston Harbor last year in the effort to ascertain the cause and modes of transmission of influenza, the Government is to conduct further investigation at Gallop's Island. Fifty sailors have volunteered for this service. A group of five experts, headed by Professor Milton J. Rosenau of Harvard Medical School, and including two physicians of the United States Navy and two of the United States Public Health Service, will have charge of the experiments. Both of the former Government tests proved negative in spite of the fact that the volunteers ate food in which influenza germs had been placed and submitted to the dropping of germs in their throats. The details of the experiments have been worked out and the tests will be thorough and will extend over a period of several weeks. Volunteers have already been sent to the island.

INFLUENZA-PNEUMONIA SERUM.—The following letter has been issued to members of the profession by the State Department of Health:

"The Committee appointed by Dr. Eugene R. Kelley to investigate the merits of

the serum obtained from convalescent influenza-pneumonia patients for the treatment of influenza-pneumonia, has reported that it 'believes it is a promising method which should be tried further.' Hospital reports and reports from private physicians strongly indicate that the procedure is of unusual value in the treatment of influenza pneumonia cases. So convincing is this evidence that the State Department of Health has obtained necessary funds to place trained technicians in various cities where they will demonstrate the methods used for the collection, preservation, and administration of the serum to all doctors who wish to avail themselves of this opportunity. Should you desire to confer with these physicians, write to the State Department of Health and the name and address of our nearest technician will be forwarded to you by return mail.

"The procedure in itself is without harm either to the patient or donor. No bad results are recorded either from withdrawing the blood or in the administration of the serum.

"To achieve the best results in the use of this serum it must be given early and to properly selected cases.

"Your coöperation in this matter is earnestly solicited."

The procedure which technicians should follow is outlined in a circular accompanying this communication:

PROCEDURE FOR TECHNICIANS TO FOLLOW.

I. Selection of Donors:

- A. Donors must be known convalescents from influenza-pneumonia.

This is indicated by history sheets showing—

- a. Temperature—fever for more than four days.
- b. Leucocyte count—not over 10,000.
- c. History of physical findings.

- B. A Wassermann test must be done and must be undoubtedly negative.
- C. Donors must have completed at least 10 days of convalescence with a normal temperature and not have exceeded 30 days from beginning of convalescence.

II. Selection of Patients:

- A. Serum should not be given to any patient who has not developed influenza-pneumonia.

- B. To be most efficacious, the serum must be given early. It is practically useless in late or moribund cases.

- C. No serum should be given unless the patient will agree to furnish some blood in return for that given.

- D. No serum should be given to those patients presenting a white count of over 10,000 or having a fixed type of pneumococci sputum.

III. Collection of Blood from Patient:

- A. Sufficient blood for a Wassermann test should be taken at the time of administration from each case receiving serum. This specimen should be sent for examination at once.
- B. Blood should not be taken before the tenth day of convalescence. Not over 500 cubic centimeters should be taken at one time.
- C. The patient should not be bled more than twice and at least 48 hours should elapse between bleedings.

IV. Procedure for Preparing Blood:

To be shown at demonstration.

V. Procedure for administering the Serum.

To be shown at demonstration.

The Massachusetts Medical Society.

The next annual meeting of the Massachusetts Medical Society will be held in the Copley Plaza Hotel, Boston, June 3rd and 4th, 1919.

STATED MEETING OF THE COUNCIL.

FEBRUARY 5, 1919.

A STATED meeting of the Council was held in John Ware Hall, Boston Medical Library, Wednesday, February 5, 1919, at 12 o'clock, noon. The President, Dr. Samuel B. Woodward, was in the chair and the following 76 Councillors were present:

BERKSHIRE, Henry Colt.	MIDDLESEX NORTH, W. B. Jackson.
BRISTOL NORTH, W. H. Allen.	W. P. Lawler.
BRISTOL SOUTH, E. F. Cody.	M. A. Tighe.
ESSEX NORTH, R. V. Bakoteli.	MIDDLESEX SOUTH, M. H. Balliey.
F. D. McAllister.	F. E. Bateman.
ESSEX SOUTH, C. H. Bangs.	E. H. Bigelow.
R. E. Foss.	C. H. Cook.
H. K. Foster.	C. A. Dennett.
W. T. Hopkins.	A. A. Jackson.
E. Poirier.	S. R. Lancaster.
HAMPDEN, T. S. Bacon.	Edward Mellus.
J. P. Schneider.	C. E. Mongan.
MIDDLESEX EAST, H. A. Gale.	C. F. Painter.
E. S. Jack.	F. W. Rice.
G. N. P. Mead.	Godfrey Ryder.
	E. H. Stevens.
	A. K. Stone.
	G. L. West.
	NORFOLK, E. H. Brigham.

A. N. Broughton.
 W. L. Burrage.
 G. W. Clement.
 H. W. Dana.
 C. B. Faunce.
 G. W. Kaan.
 Bradford Kent.
 T. J. Murphy.
 D. T. O'Keefe.
 H. H. Powers.
 S. H. Rubin.
 NORFOLK SOUTH,
 C. S. Adams.
 G. H. Ryder.
 LYNN,
 Gilman Osgood.
 A. E. Paine.
 SUFFOLK,
 J. B. Blake.
 E. S. Boland.
 G. W. W. Brewster.
 J. A. Cogan.
 E. A. Crockett.
 E. G. Cutler.
 Albert Ehrenfried.
 C. M. Green.
 W. C. Howe.
 J. L. Morse.
 Anna G. Richardson.
 Stephen Rushmore.
 G. C. Smith.
 Mary A. Smith.
 R. M. Smith.
 WORCESTER,
 W. L. Johnson.
 F. H. Baker.
 W. P. Bowers.
 M. F. Fallon.
 R. W. Greene.
 David Harrower.
 G. O. Ward.
 P. H. Washburn.
 S. B. Woodward.
 WORCESTER NORTH,
 E. L. Fiske.
 A. P. Johnson.
 E. A. Sawyer.

Charles Petit DeFangle, of Lynn.

4. That the vote of the Council on October 2, 1918, whereby the following named Fellow was deprived of the privileges of fellowship, under the provisions of Chapter I, Section 8, of the by-laws, he rescinded, because it is now known that he was then, and is believed to be now, in the service of his country:

Frederick Artemas Simonds, formerly of Cambridge.

5. That the following named Fellow, under the provisions of Chapter I, Section 6, of the by-laws, and on recommendation of the Treasurer, be granted remission of dues for the years 1917 and 1918, he having paid the dues of the three preceding years:

Eugene Thomas Galligan, of Roxbury.

For the Committee on Membership and Finance,

CHARLES M. GREEN, *Chairman*.

The Treasurer presented his annual report and handed about copies of an abstract for the use of the Councillors.

A report of the Auditing Committee and a letter from Horace C. Hartshorn, certified public accountant, were read by Dr. R. W. Greene. After a few questions the reports of the Treasurer and Auditing Committee were duly accepted by vote.

Dr. C. M. Green for the Committee on Membership and Finance announced that, by transferring one account to another, the Society had lived within the budget presented last year. He then presented the budget for the year 1919, including three plans for the use of the unappropriated balance of \$4500. (See Budget, page 232.) After some discussion, it was duly moved and seconded that the budget through the item "Unappropriated Balance" be accepted, and it was so voted. The plans presented for spending the unappropriated balance were discussed by the Council. The question as to how the dividends are apportioned to the district societies was raised by Dr. E. S. Jack. The President read Section 3 of Chapter VII of the By-Laws covering this point. Concerning a vote passed by the Middlesex South District Medical Society January 29, 1919, to the effect that members dropped for non-payment of dues, while in the service, be restored, the President called attention to the provisions of Section 8, Chapter I of the By-Laws, which specifies the method of restoring members who have been dropped. On motion by Dr. Green, duly seconded, it was voted that, in accordance with plan No. 1 of the budget, the sum of \$2500 be devoted to dividends to the several district societies, and that the sum of \$2000 be an appropriation for the Committee of Arrangements. On motion, duly seconded, the report of the Committee of Arrangements was taken from the table and it was voted that it be accepted and its recommendations adopted.

On motion by Dr. Edward Mellus, it was voted that if Fellows who were in the service and thereby by vote of the Society exempt from the payment of dues, should pay their dues, that those dues be credited to the district societies in which the Fellows had membership.

The committees appointed to consider the petitions for restoration to fellowship of Henry Tol-

On motion, duly seconded, it was voted that the record of the last meeting be approved as printed.

Dr. J. L. Huntington reported a tentative plan for the next annual meeting of the Society. He said that now the war was over, it seemed best to return to the previous custom, and he proposed that a two-day meeting be held at the Copley-Plaza Hotel, Boston, Tuesday and Wednesday, June 3 and 4, to terminate with a dinner. The date was placed for the first Wednesday in June rather than the second Wednesday because of a conflict with the date of the meeting of the American Medical Association at Atlantic City, June 9 to 13. He sketched a program of the meeting similar to that of two years ago. It was moved and seconded that the report be accepted and its recommendations adopted. Dr. C. M. Green moved that the matter lie on the table until the financial status of the Society had been considered and discussed, and it was so voted.

Dr. Green presented the report of the Committee on Membership and Finance as regards membership and it was adopted by vote.

REPORT OF THE COMMITTEE ON MEMBERSHIP AND FINANCE AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Richard Hogner, 365 Massachusetts Avenue, Boston.
 Thomas Kittredge, of Salem.

Joseph Augustus Langlois, of Pittsfield, with remission of dues for 1915, 1916, 1917, and 1918.

Herbert Frank Pitcher, of Haverhill.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the by-laws:

John Thornton Bullard, formerly of New Bedford, with remission of dues for 1918.

Louis Herbert Burlingham, of St. Louis, Missouri, with remission of dues for 1918.

Frank Leslie Burt, of Peabody, on recommendation of the Committee on Ethics and Discipline.

3. That the following named Fellow be granted further remission of dues, under the provisions of Chapter I, Section 6, of the by-laws, and on recommendation of his District Treasurer:

man, Jr., Harris S. Pomeroy, G. A. Crittendon and E. J. Cotter, reported to the Council favorable to the petitioners and their recommendations were adopted. In the case of Harvey A. Field, the report of the committee recommended that he be not restored to fellowship, and the report was accepted by the Council by unanimous vote.

The petition of R. H. Thompson for restoration to the privileges of fellowship was referred to the following committee, nominated by the President: C. D. McCarthy, C. E. Prior, Godfrey Ryder.

The petition of P. P. McGann for restoration was referred to the following committee, nominated by the President: T. M. Durrell, C. F. McCaffrey, G. A. Miles.

The petition of P. F. Ela for restoration was referred to the following committee, nominated by the President: W. L. Johnson, G. T. Little, C. H. Harriman.

On motion by the President the following delegates were appointed by the Council:

To the House of Delegates, American Medical Association, for two years:

F. B. Lund, E. F. Cody.

Alternates: W. H. Robey, Jr., F. W. Anthony.

To the Annual Meetings of these state medical societies:

Maine: F. H. Thompson, C. A. Dennett.

New Hampshire: C. D. McCarthy, E. N. Libby.

Connecticut: A. R. Crandell, H. T. Baldwin.

Rhode Island: G. O. Ward, W. A. Dolan.

The President read obituaries of Alfred Atwater MacKeen of Whitman, a Councillor of the Society for fifteen years, and of Frederic Weston Taylor of Cambridge, Vice-President of the Society in 1916-17 and also a member of the Committee on Membership and Finance since 1913. Dr. Green spoke of the faithful attendance of Dr. Taylor at the meetings of the Committee on Membership and Finance and of the loss the Society would suffer by his death.

Adjourned at 1 P.M.

WALTER L. BURRAGE, *Secretary*.

TREASURER'S REPORT.

SHOWING THE ASSETS AND LIABILITIES OF THE
MASSACHUSETTS MEDICAL SOCIETY
DECEMBER 31, 1918.

Schedule A			LIABILITIES.	
	ASSETS.		Endowment Funds	
<i>Cash</i>			Shattuck Fund (G. C. Shattuck, 1854. Balance, 1866) ..	\$9,166.87
New England Trust Co.	\$2,264.46		Phillips Fund (Jonathan Phillips, 1860)	10,000.00
Old Colony Trust Co.	3,195.57	\$5,460.03	Cotting Fund (B. E. Cotting, \$1,000, 1876, 1881, 1887)	3,000.00
<i>Investments</i>			Emmons and Associates Fund	452.25
Shattuck Fund			Fund for Professorship of Military Medicine	300.00
Annuity Policy Mass. Hospital Life Ins. Co.	9,166.87			
Phillips Fund			<i>Surplus</i>	
Mass. 3½% Gold Bonds...	10,000.00		Balance January 1, 1918 ...	26,932.35
Cotting Fund			Excess of Receipts over Expenses Schedule B	1,403.21
Deposit in Institution for Savings in Roxbury and Vicinity	1,000.00			28,335.56
Deposit in Provident Institute for Savings in the Town of Boston	1,000.00			
Deposit in Suffolk Savings Bank for Seamen and Others, Boston	1,000.00			
Fund for Professorship of Military Medicine				
Liberty Bonds — Second Issue 4%	300.00			
Permanent Fund				
Annuity Policy of Mass. Hospital Life Ins. Co.	11,253.30			
Mass. 3½% Gold Bonds ..	6,000.00			
Deposit in Franklin Savings Bank of the City of Boston	1,074.48			
Liberty Bonds—First Issue 3½%	5,000.00	\$45,794.65		
Total		\$51,254.68	Total	\$51,254.68

STATEMENT SHOWING THE CURRENT ACCOUNT OF THE MASSACHUSETTS MEDICAL SOCIETY
FOR THE YEAR ENDING DECEMBER 31, 1918.

Schedule B

CREDIT

Dues paid to District Treasurers.

Barnstable \$125.00

Berkshire 345.00

Carried forward \$470.00

Brought forward	\$470.00	
Bristol North	310.00	
Bristol South	610.00	
Essex North	784.00	
Essex South	1,070.00	
Franklin	195.00	
Hampden	780.00	
Hampshire	255.00	
Middlesex East	345.00	
Middlesex North	444.00	
Middlesex South	2,318.00	
Norfolk	2,250.00	
Norfolk South	310.00	
Plymouth	475.00	
Suffolk	3,340.00	
Worcester	1,323.00	
Worcester North	400.00	\$15,709.00
Dues paid to Treasurer	1,094.00	
Less return of overpaid assessments	15.00	1,079.00
Total Dues		\$16,788.00
Income Shattuck Fund		779.18
Income Phillips Fund		
Massachusetts 3½% Gold Bonds		350.00
Income Cotting Fund		
Interest Institution for Savings in Roxbury and its Vicinity	77.84	
Interest the Provident Institution for Savings	58.58	
Interest Suffolk Savings Bank	80.40	216.82
Income Permanent Fund		
Annuity Policy Mass. Hosp. Life Ins. Co. (2 years)	956.54	
Massachusetts 3½% Bonds	210.00	
Interest Franklin Savings Bank	88.96	1,255.50
Emmons and Associates Fund		
Donations for salary and expenses of Society's agent		431.06
Income from Deposits in Banks		
New England Trust Co.	178.93	
Old Colony Trust Co.	55.43	234.36
Total		\$20,054.92
DEBIT.		
General Expense		
President's expense	\$43.23	
Secretary's expense	519.64	
Treasurer's expense	152.86	
Librarian's expense	18.25	
District Treasurer's expense	1,049.66	
Supervisors' expense	28.72	
Board of Trial expense	62.73	
Censors' expense	204.00	
Rent	750.00	
Salaries	1,700.00	
Delegates' expense	397.14	\$4,926.83
Boston Medical and Surgical Journal		
Guarantee	9,100.00	
Editor's salary	375.00	9,475.00
Shattuck Lecture		200.00
Committee Expenses		
Arrangements	266.55	
Membership and Finance	0.00	
Ethics and Discipline	4.00	
State and National Legislation	93.32	
Public Health	40.00	
Workmen's Compensation	2.00	
Health Insurance	9.49	415.45
Annual Dividend to District Societies		2,500.00
Defense of Malpractice Suits		492.90
Cotting Lunches		210.47
Emmons and Associates Fund		
Salary and expense of Society's agent		431.06
Surplus for the year		\$18,651.71
		\$1,403.21

ARTHUR K. STONE, Treasurer

REPORT OF THE AUDITING COMMITTEE.

February 1, 1919.

The undersigned have secured the services of the expert accountant, Horace C. Hartshorn, to examine the books of the Treasurer, whose report we have accepted, and personally we have inspected the securities of the Society in the safe deposit box of the Bay State branch of the Old Colony Trust Company and found them to be correct as listed.

RAY W. GREENE,
CHARLES H. HARE,
Auditors.

LETTER OF CERTIFIED PUBLIC ACCOUNTANT.

Boston, January 21, 1919.

DR. R. W. GREENE, DR. CHARLES H. HARE,
Audit Committee, Massachusetts Medical Society,
Boston, Mass.

Gentlemen:

In accordance with your instructions I have audited the books and accounts of your treasurer for the year ending December 31, 1918, and enclose herewith,

Schedule A Statement showing the Assets and Liabilities of the Massachusetts Medical Society, December 31, 1918.

Schedule B Statement showing the Profit and Loss Account of the Massachusetts Medical Society for the year ending December 31, 1918.

The cash on deposit with the banks has been reconciled with the bank accounts and found to be correct. Disbursements have been verified, and all known income received during the year has been properly credited on the books. I have not examined any of the securities in the safe deposit box of the Society.

Respectfully submitted,

HORACE C. HARTSHORN,
Certified Public Accountant.

BUDGET.

The Committee on Membership and Finance submits and recommends the adoption of the following budget for the fiscal year 1919:

Income

Estimate of the Treasurer	\$21,000	
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Appropriations for Expenditures

Salaries of officers:

Secretary	\$800	
Treasurer	500	
Librarian	400	
Editor	300	\$2,000

Expenses of officers:

President	100	
Secretary	600	
Treasurer	150	
Librarian	20	
District Treasurers	1,200	
Censors	300	
Supervisors	30	
Delegates to annual meeting of A.M.A.	300	2,700 \$4,700

Rent of accommodations at the Medical Library	750	
Boston Medical and Surgical Journal (appropriated in October)	9,100	
Defense of Malpractice Suits	600	
Shattuck Lecture	200	
Cotting Lunches	250	

Standing Committees:

Membership and Finance	\$5
Ethics and Discipline	25

Medical Education and Medical Diplomas	50	
State and National Legislation	250	
Public Health	200	530
Contingent expenses	370	
Unappropriated balance	4,500	
		\$21,000

Three Plans for the Use of Unappropriated Balance:

Plan One:

Committee of Arrangements (annual meeting) charging members one dollar towards the dinner	\$2,000	
Dividend to District Societies	2,500	\$4,500

Plan Two:

Committee of Arrangements charging members two dollars towards the dinner	1,500	
Dividend to District Societies	3,000	4,500

Plan Three:

Committee of Arrangements (omitting the dinner)	500	
Dividend to District Societies	4,000	4,500

For the Committee on Membership and Finance,

CHARLES M. GREEN, *Chairman.*

Miscellany.

THE PRESENT ATTITUDE OF THE HOSPITALS OF MASSACHUSETTS TOWARD THE VENEREAL PROBLEM.

As part of the information needed by those organizations of the State whose work deals with social hygiene, knowledge of the position of our hospitals in regard to these matters is clearly of importance. Therefore, last October, the following circular letter and questionnaire was sent out by the Committee of the Massachusetts Medical Society on the Control of Venereal Diseases to all the general hospitals within the State, as well as to others, both general and private—

To aid in the work of the Department of Social Hygiene of the State Board of Health, which is also cooperating with this branch of the federal government, it has become necessary to ascertain the attitude of the hospitals throughout the State in regard to the admission of cases of acute venereal disease into their wards.

In order to assemble this information, the Committee of the Massachusetts Medical Society, appointed to deal with the prevention and cure of venereal diseases, asks that you will be good enough to complete the answers to the appended questionnaire and return it to the Secretary at your earliest convenience.

Very truly yours,

WILLIAM C. QUINBY, *Secretary,*
Committee of the Massachusetts Medical Society
on the Control of Venereal Diseases.

1. Name of hospital.
2. Number of beds.
3. Will you admit for treatment a case of syphilis in the acute infectious stage?
 - a. If "Yes," how many such cases have you admitted for treatment during the past year?—Do you set any limits as to age or sex?
 - b. If "No," what are your reasons for declining admission of such cases?
4. Will you admit for treatment a case of gonorrhea in the acute infectious stage?
 - a. If "Yes," how many such cases have you admitted for treatment during the past year?—Do you set any limits as to age or sex?
 - b. If "No," what are your reasons for declining admission of such cases?

(Signed)

Superintendent.

Of 81 such letters sent out, 50—or 61.7 per cent.—have been answered. Of those answering, 38 were unwilling to admit cases of acute gonorrhea or syphilis, while the remaining 12 do so admit. In other words, slightly less than 15 per cent. of the representative hospitals in the State of Massachusetts are sufficiently awake to their duty toward the public health to be willing to treat such cases, while something over 39 per cent. of the hospitals take so little interest that they have thus far entirely ignored answering the letter of inquiry.

There is no need at this time to emphasize the prevalence of gonorrhea and syphilis, or the urgent need for their treatment when in the acute infectious stage. Reference to the data at present in the hands of the State Board of Health shows that during the past eleven months in which these diseases have been reportable under the law, there have been recorded 7,600 cases of gonorrhea and 3,200 cases of syphilis. These figures are to be compared with 7,800 for pulmonary tuberculosis and 4,400 for scarlet fever occurring during the past twelve months.

And still, only 15 per cent. of the hospitals are willing to admit to their wards a case of either disease when acutely infectious; while the approximate aggregate number of beds definitely stated as closed to such cases is 2700.

Why should this be the case? Possibly an examination of the reason given by the 38 hospitals who answer in the negative may throw light on this question. Fourteen give as their only reason a rule of the hospital against admission of such cases. The statement of one institution: "It is contrary to the by-laws adopted 25 years ago," fairly represents in its self-complacent tone the attitude of this group; and in over half the instances, the hospitals so answering represent the only institution for the care of the sick in their city or community, and

all of them are supported in part, at least, by public funds or donations!

The number of *known* cases of gonorrhea and syphilis in the State is 7600 and 3200 respectively. Do the boards of government or trustees of the hospitals forming this group know these facts? They must, if their members are in any way worthy of the confidence placed in them. Still, they evade their responsibility under the cloak of a "by-law adopted 25 years ago," or "a ruling made by the trustees some years ago" (this hospital was founded in 1909!).

In the present knowledge of the prevalence and proper treatment of acute venereal disease such an attitude merits only contempt.

Twenty hospitals state their reason for declining such cases to be their inability to afford proper safeguards against transmission of infection to their other patients. In some instances this is undoubtedly the true and best reason. It would be most illuminating, however, to know how many of these same institutions would refuse to admit a case of typhoid fever for the same reason. The proper care of a case of typhoid, as it regards prevention of cross infection, is more detailed and harder by far than that necessary in either gonorrhea or syphilis. In many of these instances, therefore, the impression is distinct that though expressing a semi-willingness to care for acute venereal disease, were the physical conditions of the institution different, no whole-hearted attempt has been made or is being made to remedy these conditions. The arguments that "there is no place in our hospital to care for such patients," and that "there are no facilities for segregating, and we are unwilling to expose other patients and pupil nurses," are specious and do not carry conviction.

The truth seems to be that the patient afflicted with either syphilis or gonorrhea is not desired by our hospitals for either one of two reasons: the one a supposedly moral consideration, the other a financial one. This is most clearly shown in one frank answer that "other patients might object to going to a small hospital like this which makes any bid for venereal cases." Still, the incidence of acute gonorrhea and syphilis shown on the records of the State is 7600 and 3200 respectively!

Do these hospitals not owe a duty to the general health of the community equal to that which they owe to their yearly financial balance sheet?

But in spite of conditions so discouraging as those above detailed, much hope for the future may be drawn from the reports of the twelve hospitals which do admit cases of acute syphilis and gonorrhea, and thus include these diseases among those for the care of which they consider themselves responsible to the community. By no means are all of these hospitals the largest ones, nor situated in the largest of our cities. One clear note of hope for better appreciation of these matters is struck by the following answer. Would that there were more like it!

It will be necessary to have a meeting of the trustees before the by-law which affects the treatment of such cases can be revoked. This will be done at an early date. We have, during recent years, admitted such cases, somewhat under protest, but are perfectly sure that we should admit them, possibly under certain restrictions, and are willing to go on record to that effect as soon as the by-laws are changed.

Thus, more than ever, it becomes evident that the campaign against venereal disease must be largely based on education; education of the medical profession at large, and through them, of the hospitals, as well as education of the general public.

It is full time that the medical profession of the State recognized its *individual* responsibility in matters of social hygiene. Therefore, let every doctor do his full share in this education; in his office, in his families, and especially in his hospital. Let him begin *now*, for it is, indeed, none too soon!

DR. C. M. SMITH,
DR. P. THORNDIKE,
DR. F. H. BAKER,
DR. N. C. HASKELL,
DR. W. C. QUINBY.

*Committee of the Massachusetts Medical Society
on the Control of Venereal Diseases.*

TYPHUS EPIDEMIC IN POLAND.

In the issue of the *Lancet* for January 26 and June 22, 1918, there appeared editorial comment on the serious epidemic of exanthematic typhus which developed last spring in Poland, especially in the district of Warsaw, then occupied and administered by the Germans. This epidemic has recently become even more serious.

"The disease began to develop epidemic proportions in the last quarter of 1916, during which period 2601 cases and 181 deaths were reported. In 1917 the epidemic assumed graver dimensions, especially in the Warsaw

Government district, in which during the year not far short of 30,000 persons contracted typhus fever (in a population of about 2½ millions), of whom 2500 died. In the first quarter of 1918 the disease was still raging, no fewer than 16,706 cases and 1566 deaths being recorded during the three months, and in April the reported cases amounted to 5022, of which 458 proved fatal. Thus, during the 19 months from October 1, 1916, to April 27, 1918, approximately 54,000 persons in the Warsaw district were attacked by typhus fever, and 4705 of them died. The principal focus of the infection appears to have been the city of Warsaw (population 850,000), in which, during the above-mentioned 19 months' period, the attacks numbered 27,494, or nearly 51% of the total cases. Another focus was the industrial town of Lodz (population, 400,000), 76 miles from Warsaw, in which 3359 persons were attacked. Up to the end of April, for which month the latest official reports are available, the epidemic showed no signs of subsiding in the Warsaw district, the reported cases still averaging about 1300 per week. In Suwalki, another Polish district, occupied and administered by the Germans, typhus fever is stated to be very prevalent, as also in the neighboring province of Courland. In Lithuania, which is also in German occupation, exanthematic typhus is widely epidemic, and from January 1 to April 13 3711 cases were officially reported. The continued prevalence of typhus fever in Eastern Europe is not without danger to our own country; and this disease will have to be included among those upon which our port sanitary authorities must keep a watchful eye until the war has ended. Fortunately, typhus fever is usually a malady of the colder months of the year, and at least some temporary diminution in the number of cases and deaths in the affected districts may be expected during the summer months."

SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at the Roxbury Masonic temple, 171 Warren Street, February 25, at 8.15 P.M.

Communications:
Talk on Bronchial Asthma, I. Chandler Walker, M.D.
Personal experiences with Anaphylactic Skin Reaction in Bronchial Asthma in Children.

Joseph I. Grover, M.D.,
BRADFORD KENT, M.D., *Secretary*.

THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY.—Will meet at the home of Dr. Emily P. Howard, Van Dyke Street, near Peter Bent Brigham Hospital, Thursday, Feb. 20, at 8 P.M.

There will be a brief exercise in surgical diagnosis, conducted by Dr. Agnes C. Vietor.

Dr. Christina M. Leonard of the Probation Department of the Municipal Court, will speak of her work in the mental and physical examination of prisoners.

Alice H. Bigelow, M.D., *Secretary*.

The Boston Medical and Surgical Journal

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Original Articles.

ON THE NEED OF MORE FREQUENT ROENTGENOLOGICAL EXAMINATIONS, PARTICULARLY IN HEAD INJURIES.

By J. SHOHAN, M.D., BOSTON.

It stands to reason that the more often one resorts to roentgen examinations, the more often one meets with negative findings. That, of course, is obvious, and it is true of all classes of injuries, and of all methods of examinations.

It matters little whether it be a stethoscopic examination, blood pressure, urine examination, or blood examination. The more often one resorts to any of these methods the larger the number of negative examinations one will make, but it is equally true that the number of the positive findings will grow, too, and that, after all, should be the aim of every careful and conscientious examiner; the demonstration of every positive case.

Theoretically in all cases, practically in, at least, the vast majority of cases, it is possible to establish definite findings, provided we are willing to go to the trouble and expense, of course, to examine every case under our observa-tion.

Some time ago Dr. James T. Case made the

interesting experiment of examining, roentgeno-logically, the gastro-intestinal tract of every case admitted to the Battle Creek Sanitarium, no matter what their ailments were or for whatever reason they were admitted to that institution. He was able to report a considerable number of positive pathological findings in the gastro-intestinal tract of patients in whom there was not the slightest ground for suspecting such trouble. Since then it has been the rule of that institution to examine, roentgenologically, the gastro-intestinal tract of every patient ad-mitted.

In 1915, I had occasion to make observations on a large number of German soldiers. I had to make a roentgenological chest examination in every case. My surprises were many and, at times, startling. Many a young and apparently robust fighter was found to bear within his lungs unmistakable evidence of active tubercu-losis.

The year before, 1914, I spent considerable time in Vienna. I had the good fortune to spend some time in a "Kranken Kasse" roentgen lab-oratory. I could not help noticing the remark-ably large number of negative, or almost nega-tive, findings amongst the cases examined. One day I remarked to the director of the laboratory, Dr. Robinson, about the apparent waste of so much work on negative cases. His answer was,

"Would you rather we overlooked some positive findings?" After awhile I began to see the value of apparently negative findings.

I recall one or two striking cases. A case of injury to wrist was referred from the examining surgeon, for roentgen examination. It was clinically quite evident that the bones were not involved. The roentgenogram, though, showed a loose ununited ulnar styloid. At first glance, one was inclined, at least I was inclined, to connect this finding with the recent trauma. On closer observation it was evident that the styloid was not recently separated from the main bone; it was too well rounded, and had a fine layer of cortex all around it. Dr. Robinson turned around to the patient and asked him, "Tell me, friend, how long ago did you break your wrist?" The answer was, "Five days ago." "Yes, yes," rejoined the doctor, "I know about this time, but the previous time, quite some time ago." The poor patient was rather startled to hear this doctor, in front of him, talk to him of his old injury, which he, himself, was apparently only too anxious to pass over in silence. However, after a brief hesitation, he admitted that he did break his wrist some 14 years ago. The importance of this case lies in the fact that after two or three months it would have been impossible for anyone to tell whether that separated styloid was the result of his recent accident or not. He might have had his hand roentgenized then, and on discovering the broken styloid, claimed compensation for a broken bone, and received it, too.

Another instructive case that impressed me was that of a man, who gave a story of an injury to his back, obviously of light character; if I remember correctly, he fell on a slippery floor in his workshop. He held himself fairly rigid and was exceedingly loud in his lamentations.

Every touch along the spine would elicit apparent tenderness. The rigidity in the dorso-lumbar region was evidently genuine. However, clinically, there was not the least reason to suspect bone injury to any section of the spine. It almost seemed a waste of good time and plates to examine the man's back. But the examining surgeon and the roentgenologist had not only a clinical interest in the case, that is, to establish a diagnosis and prescribe proper treatment, they also had an "insurance interest" in him. He was a member of a sick insurance society and it was their duty to do justice to him, as well as to the treasury of the society.

He was examined and found to have a fairly advanced case of hypertrophic arthritis of the last dorsal and first two lumbar vertebrae, with "lipping" of the inter-articular discs; an almost typical "Bechterew spine."

It was made clear to the patient that he was suffering from an old condition, a long-standing case of rheumatism. The plates were shown to him, and also the plates of a normal spine. He soon admitted that he had had a stiff back for some little time, and realized that his back trouble could not possibly be due to his recent fall.

In this case, if he had not been roentgenized immediately after the accident, but, perchance, several months later, it would have been impossible to tell to what extent, if any, his fall contributed to the condition of his spine. Most assuredly, no one could honestly have stated that his fall did not have any relation to the condition of his spine, for we all know that trauma is a factor in hypertrophic joint disturbances.

The two cases cited above are quite typical of a large number of every-day accidents, in which an early roentgen examination would prove most valuable. I almost said profitable, to those who are financially responsible to the injured, for the mediate and immediate disability resulting from his injury.

On the other hand, they also well illustrate how a delayed roentgen examination might, in many instances, not only prove of no assistance in clearing up the case for the insurer, but will often complicate matters for him and, at times, will throw on him a financial responsibility which is not justly his.

But if so much can be said of bone injuries, or supposed bone injuries, in all parts of the body, how much more does it apply to injuries of the head.

We know the classic signs and symptoms of bone injury, fractures: deformity, abnormal mobility, crepitus, loss of function, and pain. As a rule, these bear a direct relation to the extent of the injury, for they are called forth by the trauma to the bone itself. A great deal of deformity will invariably lead us to the conclusion that we are facing a bone that sustained considerable injury. It surely cannot leave us long in doubt, as to the diagnosis. The same holds good for abnormal mobility, and the other signs and symptoms. They are all direct manifestations of the violence to the bone, and most often in direct relation to it. This, however,

does not hold good in head injuries. The classic signs and symptoms of fracture will here be looked for in vain: practically never found.

When there is abnormal mobility of the skull, the case will probably have lost all interest for the medical man; it will have to be "passed up." But even the fatal termination is practically not the result of the injury or fracture to the skull itself. There is nothing vital residing in the bones composing the skull, any more than in the bones composing the ankle or the wrist.

What was just now said of abnormal mobility, in relation to fractured skulls, holds good of the other signs of fracture: deformity and crepitus. Who will attempt to elicit crepitus pre-mortem in an injured skull? Not a medical man, I hope. In most cases, the very helpful sign of deformity is not much more valuable when applied to head injuries. Depressed fractures are the only ones in which one may look for deformity: look for, but not often find: and when apparently present, of how much value is it, really?

Human skulls are not symmetrical spheres. Those who have had the opportunity to observe a large number of human skulls, know well, know too well, how uneven, how irregular they are, with their bumps and their depressions, their hills and dales, their "ups and downs," even as the lives of their possessors. To infer the presence of a depressed fracture from an unevenness or depression on the skull, would, indeed, be rash.

Within the last month I had the good fortune to roentgenize the skull of a young boy of about 10. He was struck by an automobile while at play, and sustained an injury to his head. Over the occiput to the right, a little below the lambdoid suture, there was an oblong area of depression, running sagittally for about an inch. The depression was exaggerated, apparently, by the destruction of the scalp right where the blow was struck, a squashing of the soft parts, and the resultant swelling of the scalp adjacent to it. One could readily place one's little finger into that hollow for about a quarter of an inch. The roentgenogram showed plainly a fracture of the occiput, but no depression, just a fissure extending for about an inch and a half. The physical condition of the child was in every respect normal. He was up and about, eating and playing as well as ever, no abnormal neurological manifestations, no psychoses, no psychisms.

My statement to the surgeon read: Fissure of the occiput, no depressions; surgical interference at present not indicated. However, because of the depressed area I mentioned above, the surgeon operated on that skull and found, of course, a mere fissure. Were it not for that depression, there would have been no reason or no excuse for trephining that child's skull.

No doubt it is to be regretted, but it is nevertheless true, that we cannot apply our knowledge and experience, no matter how extensive, of fractured bones in any part of the body, when we come to deal with fractures, or supposed fractures, of the bones of the cranium. The old-time bone setter, or his modern congener, whose good, honest judgment, skill, and knowledge are so valuable in diagnosing and treating all classes of fractures, hardly has a place at the bedside of a victim of a skull injury. It is the neurologist and, I add without hesitation, the roentgenologist, who have a place there, next to the skillful head surgeon—and why? For the simple and obvious reason that the signs and symptoms, all the manifestations, and the unfortunately frequent fatal termination that follow any trauma to the cranium, are but little due to the violence done to the bone, it matters little how severe, but to the violence that was incidentally done to the contents of the cranium and its meninges. It can be truly said that our patient is not suffering much from, or dying from a fracture of the cranium but a "fracture" of the brain, or its meninges, or both.

The neurologist can frequently shed considerable light on the brain injury and its extent, but his evidence as to the condition of the cranium itself is only indirect, and not always conclusive.

Do all fractures of the skull produce marked neurological disturbances? In other words, are all cranial traumata accompanied by trauma to the brain and its meninges? The answer must, of course, be emphatically in the negative. It is the every-day experience of all careful observers that skull fractures are not always accompanied by brain or meningeal injury.

The case of that little fellow I cited above is an illustration and a type of a large number. I shall have occasion later to speak of a similar case, in which a fissure of the parietal over three inches in extent, produced no signs or symptoms whatsoever, and would have been over-

looked, were it not for the roentgenological evidence.

A considerable number of cranial fractures, belonging to the so-called "bursting" or "bending" type of fractures, do not always produce brain lesions. In every instance it would depend upon the amount of stress the skull was subjected to. Then comes the class of fractures overlying the "silent" areas of the brain, in which slight injuries will produce neither motor nor sensory disturbances.

At their best, the neurological manifestations in cranial fractures are often a blind guide, at times confusing, and often absent altogether.

Thus we see the medical man quite often helpless when facing a victim of skull injury. His knowledge and experience with fractures in general are of no value to him; neurological evidence may be absent, or when present, far from conclusive. His only fairly safe and sure guide is the roentgenological evidence. This evidence, in almost all cases, is all sufficient to establish the presence or absence of a fracture, its location, its extent, and its character. It may also indicate, if only to a limited extent, the therapeutic procedure; whether the fracture is depressed or not, hence, whether trephining be urgent or not.

At this late date, there is hardly any need for further demonstration as to the place of roentgenology as an aid in the diagnosis of bone injuries; its place is now well established. But if that is so in regard to injuries of all the bones in the body, it is ever so much more so in regard to injuries of the cranium.

Unless we submit every head injury to roentgen examination, we are bound to overlook many fractured skulls. No doubt many have been overlooked in the past, and many will be overlooked in the future, unless one makes it a hard and fast rule to roentgenize every injured skull, and that, too, as soon after the injury as it is at all possible.

The repair process of fractured cranial bones differs materially from that of other bones in the body, long or short. We know how any bone in the body is repaired: by callus formation, to which the periosteum contributes the major part. Weeks after, and months after a bone was fractured, the place of injury may still be recognized roentgenologically, and at times even by simple palpation, because of the heavy overgrown callus that invariably results. Long after, in some instances years after the

injured individual has resumed his normal activities, should the nature of his former injury come into question, should it ever be of interest to determine whether his former injury resulted in a broken bone or not, a roentgenological examination would, in all probability, determine that point very definitely. The eburation on the cortex of a long bone may tell its tale of a fracture long after the occurrence has been completely forgotten by the injured and his friends. All thanks to the heavy callus that was once there during the process of repair. In fact, in cases of fresh fractures of the fissure type, with hardly any separation of fragments, it is even possible to overlook them on the roentgenogram at first, but at first only. Ten days or two weeks later, the tell-tale callus will not leave us in doubt very long. Unfortunately, it is not so in fractures of the cranium; callus of a fractured cranial bone is very light indeed, for the process of repair is very different here.

The pericranium and dura are both capable of producing bone, nevertheless they take but little part in the repair of the broken cranium. That is almost entirely repaired by the cancellous tissue of the diploë layer, between the outer and inner tables; hence the thick callus, the product of periosteal activity, is missing here.

It is hardly an exaggeration to state that it is possible to demonstrate definitely the presence or absence of every fresh fracture of the skull. Any one who has seen a number of fractured skulls, can hardly ever mistake a fracture line for anything else. The story, however, assumes a different aspect two or three months after the injury. A fracture may have been there, regeneration may have taken place, there may be no callus, and very little else to indicate the line of fracture. A roentgenogram taken then, no matter from what angle and how carefully, will defy at times the most expert.

The patient may complain now of headaches, may show psychic disturbances, slight memory deterioration, irritation, short confusional periods; may go on to epileptoid seizures, or even apparently true epilepsy. Neurological disturbances may manifest themselves. I have observed patients who have had any and all of these signs and symptoms. They dated their troubles from, and definitely ascribed them to a former head injury: a fall, a blow, a collision. They may tell the truth, and again they may fabricate; some belong to one category, some to the

other; it is not at all a simple process to eliminate the sheep from the goats.

The preëminent question in all these cases is, was the cranium fractured at the time of that fall or of that blow a year ago, two years ago, many years ago, or was it not?

The cranium may not have been injured, a strong subjective element may enter into the various complaints of this patient, perhaps a case of traumatic neurosis. Again, all his troubles may even antedate his injury; he connects it all with his accident or fall from an ulterior motive, as is often the case. But it is just as conceivable that his former injury did cause a fracture of his skull at the time. He was unconscious for a while, probably for a very short while, "just stunned" by the blow, as they often put it; he was picked up by someone nearby, or even helped himself up; he might have been taken to a neighboring hospital, where he stayed several days or a week, then went back to his daily task, perhaps did not feel quite so well, but continued at his work. I have heard this story again and again. At that time, he was discharged with the all-too-ready diagnosis of concussion of the brain, and let go at that. Today we meet him in the neurological clinic, perhaps he graces a psychiatric clinic, or a psychiatric ward, a thoroughly miserable and helpless being, and to the roentgenologist the question is put up to demonstrate whether or not this man's cranium was fractured months or years ago. This feat can be accomplished only in a few cases, whereas at the time of the accident, or very shortly after, it would have been a comparatively simple problem and solved with little difficulty by a careful, painstaking roentgenological examination, carried out by one who is not only a mere technician, a so-called x-ray "picture-taker," but by one who possesses sufficient medical knowledge to appreciate the full clinical importance of each and every case.

A little over a year ago, I had occasion to examine a case for an out-of-town surgeon. The patient fell off the running board of a street car. He struck his right side and head. He was taken to the local hospital there, where they did have some sort of a roentgen laboratory that was in charge of the "general utility man"; he was fireman, porter, and x-ray picture-taker. The patient, who struck the right side of his head, was naturally quite tender on that side, and when he came to "lie" for his

picture, he expressed a preference to lie on his sound side, the left, to which the "artist" in question did not object. The result was a technically fairly good roentgenogram, but very faint evidence of fissure, which the surgeon saw fit to disregard. About two months later I examined the same case and could readily demonstrate the line of bone discontinuity in the right parietal bone, for I had the site of injury in close contact with the photographic plate, and besides took stereoscopic views. Very likely, a year later, it would have been, at best, very difficult to demonstrate that fracture.

Every trauma, being a pathological condition, presents, as a matter of course, a clinical problem; the problem may be simple, or complex, depending upon the extent of the injury, its site, and its character. But alongside with the clinical aspect of the case, almost all injuries present also a medico-legal problem.

After we discount the few self-inflicted injuries, all traumas are accidental in character, and the vast majority of accidents are of a medico-legal nature. While I am not in possession of any statistical data, and am not aware that any such are extant, I dare say without fear of contradiction, that by far the largest number of all medico-legal accidents are industrial in character, with the question of compensation invariably involved.

Medicine has too long remained a purely clinical science and art. It is only of late years that the social aspect of medicine is beginning to attain its proper place. An injury to the wrist, the back, the head, or whatever part of the body it may happen to be, when sustained during working hours, presents rather a complex problem, more so from its social than from its clinical aspect. It is no longer merely a matter of deciding whether or not the bones or ligaments in the wrist or back are severed. We are called upon to pass judgment upon the kind of disability that injury is liable to cause; whether permanent or temporary, partial or complete: what compensation the injured is entitled to, and how soon he can safely resume his occupation. Are the claims of the injured just, or is he shamming? In short, our interest is no longer confined to the wrist, back or head, but to the entire man or woman, as the case may be. Not infrequently, the social aspect of a given case does not harmonize with the avowed opinion of the

clinician, may even run counter to it. Many an injured person is pronounced clinically sound, yet socially he remains a mere incubus, nay, worse, a drain on society. He ceases producing and claims compensation. Is he entitled to it? That is the question par excellence.

To protect ourselves, that is Society (or the individual or corporation that assumes this social responsibility), against the imposition of the unscrupulous, is our first duty. It is no less our bounden duty to protect every individual in his just claims on Society in which he was a producer while his health permitted, and before he was incapacitated while performing his duties.

We can invariably give each the maximum of protection by ascertaining, with all the means at our disposal, at the time of every injury, just what damage was or was not done to the injured part.

Far be it from me to minimize the importance of the clinical data, the expressed opinions of the attending physicians, but should we not also substantiate them, by all the objective evidence we can possibly obtain? What better objective evidence can we possibly have than properly taken roentgenograms?

No doubt our experts will, for some time yet to come, find cause to differ in the interpretation of certain roentgenograms. But as time goes on, the technic of roentgenological examination will surely become more perfected, and our skill in the interpretation of the various shadows on roentgenograms will leave less room for difference and dispute among our experts. Even with our imperfect knowledge of technic and interpretation, roentgenograms constitute at present our best, if not only, objective evidence in bone injuries.

Our European confrères have already grasped the full significance and value of such objective evidence, as witness the well equipped roentgen laboratory, always in charge of the very best men, in connection with their Sick and Accident Insurance Societies. This is, no doubt, due to the fact that Social Medicine was recognized on the other side of the Atlantic and assigned its proper place some time before we here learned to appreciate its full significance. Doubtless we in the United States, with the traditional American progressiveness, will shortly be abreast of them, and soon after set the pace for them.

The two cases, that of the wrist injury, and that of the back injury, cited above, are, of course, typical of a host of similar cases, and show how much annoyance and unnecessary expense may be saved by a timely roentgenological examination. On the other hand, neglect of this practical and ready means of diagnosis may lead to unnecessary litigation and expense. The following will amply demonstrate.

Some time in November, 1915, an employee in one of our large cotton mills sustained a head injury while at work. He stooped down, presumably to pick up some fallen object, and on rising struck the right side of his head against the wheel attached to his machine. A small swelling was produced at the site of injury, but the scalp was not broken. He continued at his work for about an hour, with no thought of the injury. Then his head started to ache, whereupon he reported the case to his foreman. Later in the day the company physician examined him. The pain in his head continued, but he remained at his work for some weeks. He then went to the local hospital, where, under anesthesia, a scalp incision was made at the site of the injury. However, he returned home the same day, but did not go to work for two days. His condition grew steadily worse, and in March, 1916, about four months after the injury, he was forced to give up his work because of dizziness and headaches.

In June, 1916, a "second operation" was performed on patient's head, this time under local anesthesia, with no relief or change in his condition. A month later, the patient was referred by an insurance claim-agent to one of our large hospitals for examination. The gist of their report was, that there was no reason why the patient should not resume his former normal activities, and the sooner he did so the better for all concerned, the patient included. It does not appear from the record that a roentgenological examination was thought of or suggested.

However, notwithstanding the good advice of the examining neurologist, the patient did not go back to work. He persisted that work was out of the question. He was in constant pain, felt dizzy most of the time, could not sleep because of his headache, and was quite miserable all around. After months of dispute, his case finally reached the Industrial Board. He was referred by the Board to one

of our local hospitals, where, in December, 1916, I had the opportunity to observe him and examine him roentgenologically. The question to determine was, of course, whether or not the man sustained an injury to his skull some thirteen months ago. I could not see any positive evidence of injury, but at the site of injury there was a typical area of gumma of the skull. I made my diagnosis before the report of a positive Wassermann was turned in, substantiating my statement.

There was, in a nut shell, the explanation of this poor mortal's suffering.

To the credit of our Industrial Board be it further recorded, they gave this poor man the benefit of the doubt, and awarded him compensation from the time he was forced to give up his work. I am sure no one will find fault with the Board for its decision. Here was this suffering, poor mill-hand who, previous to November, 1915, was self-supporting, earning his bread by the sweat of his brow, as the Good Book orders, now a helpless charge on the community in which he was once a useful member, an inmate of their poor house, and almost stigmatized as an unscrupulous shirker and imposter. Surely reason enough to award him that mite of compensation.

No doubt the award as finally handed down, was on the assumption that his sufferings were due to the luetic lesion in his skull, which assumption hardly anyone would dispute. But that is not all. It had to be further assumed that the luetic condition appearing at the site of his injury, was at least indirectly caused by the blow, and that it did not already exist at the time of his injury. If evidence, unmistakable objective evidence such as a roentgenogram, for instance, could have been produced to show that already in November, 1915, there was a luetic condition in that skull, could the Board have made that award? With all our sympathy for that poor sufferer, and granting the justice of the larger idea of industrial insurance, granting that it is the duty of Society to care for all its wrecks, no matter how they were wrecked, one could not justly demand that the insurance company in question should assume the responsibility for this man's misfortune. He did not claim, and no one claimed it for him, that he contracted lues while performing his daily task at his machine. His employer was made to bear the responsibility of his enforced idleness because

it was assumed, of course, that when he struck his head on that November day, in 1915, he sustained some injury to his skull which reduced the normal resistance of the bone at that site, and the luetic lesion was called forth as a result of it.

We would have less to assume and would have more definite data to go by, if that man's skull had been examined roentgenologically at the time of injury. Again, it might have been examined four months later, when he was forced to give up his work. We would know definitely what injury, if any, the blow caused to the skull: if the signs of luetic bone lesion were already present, or if they were developed gradually after the blow and were in full evidence in March, when he was finally incapacitated for work.

How much more simple the problem would have been then, and how much more justly we could have solved it, more justly to both employer as well as employee!

Granted that when this mill-hand was first examined by the mill physician on the day of the accident, there probably were no strict clinical indications to submit the patient to a roentgenological examination. Clinically, perhaps not, but from the broader aspect of medicine from the social aspect, there was every reason for it, as subsequent events proved.

Another case that might be of interest in this connection is that of a colored expressman who fell off his team and struck his head. He was taken to one of our hospitals, where he remained two days, then was discharged, apparently well. No roentgenological examination of his head was made, and consequently there is no way of ascertaining whether or not the skull was fractured by the fall. He returned to work, but acted rather queerly, according to the testimony of his employer and fellow workers. He appeared confused at times; orders had to be repeated to him as he did not seem to grasp the meaning of ordinary words.

A week after he resumed his work, while going down stairs with a trunk on his back, he fell again. He was taken to a hospital, and shortly afterwards I roentgenized him, and demonstrated an extensive fracture of the parietal bone.

The problem of compensation did not enter into the case, though the final chapter of the case, is unknown to me. The interesting ques-

tion nevertheless arises, when did this man fracture his skull, at his first fall or at his second? In this particular case, nothing had transpired between his first and second fall to make the answer of practical value. But a host of possibilities might have complicated the case exceedingly. He might have changed employers, and thus, perhaps, be transferred from one insurance company to another. Or his employer might have changed his insurer, and thereby placed the burden of this man's disability where it did not belong. We know that he was irritable and, at times, confused after his first fall. Supposing that, at this time, he got into a brawl with a pal and was struck, and his fractured skull subsequently discovered. Where are we to place the responsibility? How are we to know? And yet on the answer to that question may hang the reputation, the freedom, the very life of a fellow-man.

From my own limited experience, I could readily multiply these instances, proving in every case the all importance of early roentgenological examination in all injuries, especially in those of the head. I cannot resist the temptation of citing briefly one more instance. This was an accidental injury that did not have a medico-legal side to it, though it could hardly be said that even this case was without its social value. Every person injured and thereby incapacitated is a social loss, whether or not he has any legal claim for compensation.

This man, a trifle the worse for the beverages he had imbibed, had a friendly tussle with a pal; he was thrown to the ground and banged his head against the sidewalk. He was unable to get up, and was taken in an unconscious condition to one of our hospitals. Apparently his alcoholic breath was what mainly attracted the attention of the medical attendant. He was considered as a case of alcoholism. In a day or so he "sobered" up, and a few days later was discharged. He was home a week, when he developed a motor aphasia; he was confused and dazed. His roentgenogram showed a fracture of the parietal, running into the temporal, altogether probably over five inches in extent.

This poor man had only himself to blame for his troubles, but that, nevertheless, does not absolve us medical men from our duty to him. Who will say that we did our full duty by him when he was permitted to shift for himself with his severed skull, while the means to verify

his condition were so close at hand? This case, as well as the others, must bring it home to every one of us, that unless we make it our golden rule to roentgenize every accident, especially of the head, we are bound to overlook a large number of serious cases.

It stands to reason, that the more often we shall resort to roentgen examinations, the more often we shall meet with negative findings, but no man with a severed skull will be discharged from a modern hospital, in the mere care of his wife, and fewluetie skull lesions will escape observation for months. We shall not run the risk of burdening one insurance company with the responsibilities of another. We shall avoid a good deal of unnecessary litigation, and friction between employee, employer, and insurer. We shall have more definite data that will make it possible for us to deal more justly with all concerned.

Selected Papers.

ERRORS OF DIAGNOSIS IN PRIMARY EXTRA-GENITAL SYPHILITIC LESIONS.*

BY MARCEL PINARD, M.D., PARIS, FRANCE.

Ex-Chef de Clinique at the Faculty of Medicine, Paris.

SEEING that the lesions of primary syphilis not infrequently give rise to errors of diagnosis when they present themselves in the usual spot, *e.g.*, on the reproductive organs, it is not surprising that such errors should be of even more frequent occurrence when the lesions attack other parts of the body. Sundry instances of this have recently come to our notice in which non-recognition of the syphilitic nature of the lesion was the cause of the disease being communicated to others, an accident which an earlier diagnosis would have obviated.

A soldier, D, was on furlough from October 13 to 23. He had occasion to consult the medical officer of the district where he was staying for considerable glandular enlargement under the chin, which he was told would have to be opened. He did not like the idea, so he postponed any active measures until his return to the regiment, and there, after passing through various auxiliary hospitals, he gravitated into one where the condition was diagnosed as

* Reprinted from the Medical Press of Jan. 1, 1919.

"goitre." An operation was judged necessary, and photographs were taken, full face and in profile. It may be conceded that on the strength of the photographs one would be almost tempted, were it not for the rather high-up situation of the tumefaction, to call it exophthalmic goitre, the right eye looking upwards favoring this explanation. However this may be, the patient narrowly escaped being operated upon, his exemption being due to the intercession of an army surgeon, who noticed that he had a secondary eruption, whereupon the patient was transferred to a syphiligraphic centre on November 4.

It turned out to be a case of syphilitic chancre of the mouth with tremendous enlargement of the glands. As so often happens, the razor was incriminated, but it is left open to question whether the razor cut into a chancre in the course of formation, or whether it created a solution of continuity which subsequently became infected.

Another soldier, while being shaved early in October, bled under the chin. He was dressed at the infirmary, where it was thought to be a mosquito bite. The wound was dressed with wet dressings, but did not completely heal until December 10.

In November, however, he complained of pain on swallowing, and aphonia, and he went to a hospital for a month, where he was treated with gargles and collutories, without any improvement. As he was anxious that his tonsils should be removed, he was sent to the throat clinic, where syphilis was diagnosed, and he was dispatched to a centre for syphilis on December 15, that is to say, two months and a half after the appearance of the primary lesion. Traces of the chancre remain under the chin, where there are still enlarged glands.

A third patient was transferred on December 1, 1917, with the diagnosis, "glandular abscess of the left axilla." He was admitted to the surgical ward on December 7, when he was suffering from sore throat, with high fever, severe nocturnal headache, and albuminuria. Papulo-erosive lesions were discovered on the sheath and scrotum, present since December 3. Thereupon the patient was transferred to a syphilitic centre. The diagnosis of secondary syphilis could not be called in question. The much-

enlarged axillary glands which, for a long time, were the only observed lesion and motivated his removal, still existed. We thought they might reveal the whereabouts of the primary lesion, and after close scrutiny we found a red scaly patch on the dorsum of the second phalanx of the left middle finger, slightly infiltrated but actually healed. This had made its appearance four months previously, in September, and was caused by a log of wood that had pinched him. The resulting ulceration had been dressed for a long time as for an ordinary wound.

A fourth patient, employed in a munition factory, was sent by his doctor to the dermatological clinic on account of a cutaneous eruption. It proved to be a maculo-papular secondary syphilitic eruption. Search was made for the primary lesion, which was neither in the throat nor on the genitals. A dressing on the right thumb led us to suspect that origin, and as a matter of fact we found there an ulcer that had existed since two months, depressed, irregularly oval, not punched out, with a red muscular floor, slightly infiltrated. No epitrochlear adenitis, but some enlargement of the axillary glands. Wassermann reaction strongly positive.

The patient's wife, on examination, revealed nothing of interest after several careful clinical examinations. The uterine cervix appeared to be normal, but there was some metritis. She had complained of severe attacks of headache for several days past, and the Wassermann reaction was feebly positive. It would seem, therefore, that her syphilis was more recent than that of her husband, and was particularly insidious in that no cutaneous manifestation could be discovered.

A patient seen a few days later for syphilis of somewhat older standing than that of the husband of this last named patient turned out to be the fellow worker of the woman, and sat next to her at table.

These several cases show the importance for the practitioner of being prepared to diagnose extra-genital syphilis. The chancre itself as well as the glandular enlargement might pave the way to very unnecessary surgical interventions, and open the door to further infection, not to speak of the consequence to the patient of having no proper treatment for many weeks or months.

Society Report.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF WEDNESDAY, JANUARY 1, 1919, AT 8 P.M.

The President, COLONEL RICHARD H. HARTE, in the chair.

RECONSTRUCTION PROGRAM OF THE PUBLIC HEALTH SERVICE.

SENIOR SURGEON CHARLES E. BANKS, U.S.P. H. S. Washington, D. C.: Whoever writes the history of the present war will find among the most significant of its developments the achievements of our profession in the field of preventive medicine; in the huge army of nearly five millions mobilized in the United States there have been less than 200 cases of typhoid fever. One may safely say that as a result of the remarkable work in sanitation and preventive medicine carried on by the allied medical organizations, hundreds of thousands of fighting men were preserved from ignominious death from preventable disease. That which has been accomplished in the military zone under most unfavorable environments can be duplicated in civil life under less complicated conditions. The men whose lives were saved by the application of modern sanitary methods and the principles of preventive medicine understand the necessity for application of sound sanitary principles to the ordinary daily walks of life. They will not only practice these principles themselves, but demand that those in authority in health matters shall apply them in the interest of the public health. The superficial work which has characterized a good deal of our health activities in the past will be no longer tolerated. The medical profession must be prepared for a reconstruction of methods in connection with the public health. The saner logic of preventive medicine will supersede the ancient order of attempting to cure disease that has become established. The leadership in this period of reconstruction will naturally devolve upon the United States Public Health Service. The program with which this national organization intends to meet the emergencies of the situation is comprehensive and far-reaching, and for its full success is dependent upon the coöperation of organized medicine. It meets urgent national needs by outlining health activities which are practicable and which will yield the maximum

result in protecting national health and will diminish the toll of thousands of lives sacrificed by preventable disease and unsanitary conditions. The program comprises exhaustive work under industrial hygiene, prevention of the diseases of infancy and childhood, water supplies (National development of safe water supplies), milk supplies (National development of safe milk supplies), sewage disposal, malaria, (National development of measures for its control), venereal diseases, tuberculosis, railway sanitation, municipal sanitation, health standards, health education, collection of morbidity reports, organization and training for duty in emergency of the reserve of the Public Health Service.

If this great world war found us unprepared, let the same not be said of us in this period of reconstruction.

DR. J. M. ANDERS: Public health activities have greatly suffered during the war, and this is perhaps especially true of civilian tuberculosis activities for the reason that many able workers were in the Army and Navy. Perhaps the most important of the lessons we have learned in the recent world war is the fact that the individual efficiency of the men on the firing line is the foremost factor in modern warfare. The large percentage of rejections, by the local draft boards, of the men called to the colors, directs especial attention to the problem of physical education in this country during this reconstruction period. Every individual, it seems to me, should be taught how to promote his or her health and I believe this could be best accomplished in connection with our public and secondary schools as well as in the colleges and universities. While the idea of universal military training should be encouraged, the scope of the plan should be, and the one presented tonight is, sufficiently comprehensive to include the entire American race. I believe that if in the immediate future sufficient attention were devoted to the matter of physical education many of the details in the program just outlined by Colonel Banks would in due course be found to be unnecessary. All are probably aware of the fact that in England there has recently been formed a ministry of health which will combine and coordinate all the public health activities under one head. Such a reorganization of the public health activities in this country would be a consummation devoutly to be wished

for, and it would certainly facilitate that which Col. Banks has emphasized, namely: the necessity of sympathetic coöperation among all allied agencies having to do with public health work. Moreover, I feel strongly that there could be no more propitious time than the present to set in motion efforts to this end.

American Medical Biographies.

GAULTIER, JEAN FRANÇOIS (1708-1756)*

A King's Physician of Quebec after whom was named the checkerberry plant, *Gaultheria procumbens*. Botanists, Asa Gray among them, have mistaken the identity of our physician, a friend of the Swedish naturalist Kalm, when the latter visited Quebec in 1749, assigning the sponsorial honor to Hugues Gaultier, a Parisian surgeon, and surgical and botanical writer, who took his medical degree at Montpellier in 1763 and died in France in 1778. The orthography of the name Gaultier has caused botanists much discussion, but they agree that the name *Gaultheria* should stand as the proper spelling, however the original name may have been written.

Jean François Gaultier. (also Gautier or Gauthier) was the son of René Gantier, of Lupézin, and of Françoise Colin, of La-Croix, diocese of Avranches, Normandy. He was born in 1708, for his burial certificate in 1756 gave his age as 48 years. We learn that Gantier on his arrival in Quebec from France attended law lectures given by the procureur général Verrier. (Roy. Hist. du Notar. au Canada, I. p. 384). These lectures were begun in 1733. In 1740 Verrier, writing to the minister of Marine, mentions Sieur Gaultier, physician, as one of his pupils and as exciting the emulation of the others by his zeal, he "giving to his law studies as much time as he could spare from his professional duties."

In 1741 Gaultier was made King's Physician for Canada, making a trip to France in the vessel *Le Rubis*, returning in 1742 after he had walked the hospitals of Paris.

According to the early records of Quebec, Gaultier became a member of the Superior Council in 1744 and an assessor, first taking his seat in the following year. In the year 1745 the

Royal Academy of Sciences of Paris made him a correspondent of M. du Hamel, one of its members, and he soon sent over a collection of specimens, having to do with natural history, which was placed in the King's gardens; again, in 1749, a collection of different sorts of seeds met with a similar disposition.

Gaultier followed in the footsteps of his predecessor, Michel S. Sarrazin, in being Royal Physician to the Province, in his membership in the Supreme Council, in becoming a corresponding member of the Academy of Sciences and in his researches in natural history. In 1742 he began a journal, at the request of M. du Hamel containing records of daily temperatures, state of the weather, direction of the wind and descriptions of animal and plant life. The journal was sent to M. du Hamel who read extracts to the Academy. In the history of the Royal Academy of Sciences of Paris for the year 1744 p. 135, is to be found a memoir by M. Guettard comparing Switzerland with Canada. In this the writings of Gaultier on the minerals and mines of the country are frequently cited, especially those on a lead mine at Baie-St. Paul, for which Gaultier received a gratification of 400 pounds from the president of the Navy Board in 1750.

Jean François Gaultier married Marie Anne Tarieu of Lanaudière, March 12, 1752. She was described as being about 44 years old, daughter of Pierre Thomas Tarieu, Sieur de la Pêrade, lieutenant in the army.

Gaultier demonstrated to the Academy the superiority of the Canadian tea berry to that found in France. He said it made an excellent aromatic beverage without sharp taste or bitterness, and having diuretic properties especially valuable for people who lead a sedentary life and are subject to stone.

In 1748-49 the Swedish naturalist, Peter Kalm, visited New England and Canada. At Quebec he met Gaultier, who, at the command of the Marquis de la Galissonnière, edited Kalm's list and description of plants of Canada, the Marquis himself correcting and annotating it with his own hand. Gaultier was named by the Governor to accompany Kalm. They visited the Hôtel Dieu, August 8, 1749, two days after Kalm's arrival, and the latter refers to his guide as "a man of great learning in physics and botany and now the physician to the convent." (Voyage de Kalm, in Mém. Soc. Hist. de Montreal, 8e livr. 1881, p. 101.) Kalm

* From the forthcoming "American Medical Biographies," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

copied into his account of his voyage Gaultier's botanico-meteorologic observations during the year 1745.

Kalm is said to have given the name *Gaultheria procumbens* to the Canadian tea berry, in honor of his friend. In the year 1753 Gaultier presented a paper on the subject of maple sugar to the Academy, one of the eight papers that were thought worthy of printing and now to be found in the Transactions.

Gaultier died in 1756, probably a victim of an epidemic introduced to Quebec by the frigate *Leopard* of the squadron that brought over Montcalm. His funeral at the Church of Notre Dame de Quebec, July 11, 1756, was largely attended. His widow lived until 1776, when she died in Quebec at the age of 68.

MICHAEL JOSEPH AHERN, M.D.
GEORGE AHERN, M.D.

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Book Reviews.

The Surgery of Oral Diseases and Malformations: Their Diagnosis and Treatment (Third Edition). By GEORGE VAN INGEN BROWN, D.D.S., M.D., C.M., F.A.C.S. Philadelphia and New York: Lea & Febiger. 1918.

The great achievements in the alleviation of suffering of individuals who have been wounded in the jaws and face during this war are outlined in the chapter relating to war surgery in the third and present edition of this book. A great many illustrations of actual cases taken from the various hospitals in the war zone serve to impress upon readers of the previous editions how important a feature in the reconstruction of battle-scarred men oral and plastic surgery has become. Treatment of such wounds under war conditions could not have been so successfully carried out were it not for the great labor along these lines conducted in private practice and in hospital clinics. The experience of the author during 30 years of such practice is given here. As a teacher of oral surgery Dr. Brown has designed this book as a book of reference touching medical interests in their oral relation. It is also arranged to aid in preparing students for examination and as a guide in trying clinical situations after graduation. A comprehensive set of questions based on the subject matter discussed in each chapter is outlined, and many original drawings and photo-

graphs of patients actually treated emphasize the good results of corrective operations. The subjects discussed include: Diseases of the Mucous Membrane of the Mouth, of the Nervous System Affecting the Buccal Region of the Bones, of the Glands, of the Maxillary Sinus, Malformations, Diseases and Injuries of the Lips, Harelip, Cleft Palate and Defects of Speech, Tumors, Infectious Diseases, and the Treatment of Wounds under War Conditions.

Modern Urology in Original Contributions by American Authors. Edited by HUGH CABOT, M.D., F.A.C.S., Chief of the Genito-urinary Department of the Massachusetts General Hospital; Assistant Professor of Genito-urinary Surgery in the Harvard Medical School, Boston, Massachusetts. Volume 1: General Considerations—Diseases of Penis and Urethra—Diseases of Scrotum and Testicle, Diseases of Prostate and Seminal Vesicles. Illustrated with 368 engravings and seven plates. Philadelphia and New York: Lea & Febiger. 1918.

This important work is a worthy and satisfying expression of our knowledge up to date of the still young specialty of urology. The book embodies two large volumes, whose contents consist of many chapters, each one from the pen of an American author. Dr. Cabot, from his knowledge of the field of work, and from his acquaintance with the workers in America along these lines, has been able to choose the men best fitted for the work they were to do. He has shown intelligent judgment in selecting men who were young enough to do their work with interest and zeal, and who, because of the hospital and other opportunities, were equipped adequately with the experience and judgment to do their several works in a wise and satisfactory way.

While Dr. Cabot's statement in his preface that "all composite works have an inherent weakness, in that they lack the smoothness and balance of books produced by a single author," it is perhaps true that the task for a single author in producing a book of such magnitude, and the effort to make it both adequate and up-to-date is such a large one, as too often to make it a most prosaic and uninteresting presentation of clinical facts and opinions. This series of chapters presents its subject matter with freshness and vigor and with convincing authority, because of the variety of its authors, and because of their ability and experience. The book seems to the writer much more interesting, and not less valuable, than the so-called text books from the pen of one man.

To attempt a review of each article separately is obviously impossible. They are all of high grade, and are all conscientious presentations of their various subjects. The book probably

contains as complete information on present-day urological knowledge as exists in any book in the English language, and Dr. Cabot deserves credit for its compilation. The fact that the book comes from the workroom of Messrs. Lea & Febiger is sufficient guarantee of the excellence of its construction.

Military Surgery of the Zone of Advance. By GEORGE DE TARNOWSKY, M.D., F.A.C.S. Philadelphia and New York: Lea & Febiger. 1918.

The military surgeon, confronted by lack of time, inadequate equipment, and military necessity, is forced to meet many problems which he would never encounter in civil life. Medical War Manual No. 7, dealing with "Military Surgery of the Zone of Advance," has been compiled under the supervision of the Surgeon-General, for the purpose of making available to medical officers in the war service information which has been acquired by painful experience during the past three years. The general conditions under which the work must be done—the nature of the country, the location of the first-aid stations and hospitals, the limited equipment and personnel, and types of projectiles responsible for wounds, general sanitary conditions, and means of transportation—are clearly described. Of inestimable value are the methods here discussed of treating traumatic shock, hemorrhage, soft tissue wounds, tetanus, gas-bacillus gangrene, and wounds of the cranium, face, thorax, abdomen, spine, peripheral nerves, and joints. One chapter deals with the use of roentgenology in war surgery and gives a detailed description of several methods which have been found most satisfactory. Treatment of infected wounds by the Carrel-Dakin technic is explained. This book is a résumé of treatment which those best qualified to judge have considered most valuable under war conditions.

The Orthopedic Treatment of Gun-Shot Injuries. By LEO MAYER, M.D. Philadelphia and London: W. B. Saunders Company. 1918.

The task of restoring the crippled soldier not only to health but also to a wage-earning capacity, is one of the greatest problems by which the world is confronted at the present time. The day has passed when cripples are allowed to return to their homes and lead complacent lives of dependency upon society. The scope of the modern surgeon has been broadened, and now he recognizes a responsibility to the industrial world as well as to his profession. In this volume, methods of treating gun-shot injuries, both at the front and in the base hospital, are discussed, from the point of view of functional restoration. The proper fitting of artificial limbs is a problem which is receiving more at-

tention than it has received in the past. The author of this book emphasizes the importance of this work and shows the value of a comprehensive knowledge of mechanical principles and their application to surgical cases. Orthopedic treatment of fractures, injuries to joints, nerves, muscles and tendons, is discussed and helpfully illustrated by photographs and diagrams. One chapter is devoted to the aims of organization of an orthopedic reconstruction hospital. This book presents a valuable exposition of the most modern and effective theories, which may have been supplemented by the test of experience in the present war.

The Surgical Clinics of Chicago. August, 1918.

Volume II., Number 4, with 110 Illustrations.

Published Bi-Monthly. Philadelphia and London: W. B. Saunders Company.

The August number of *Surgical Clinics of Chicago* contains articles by Drs. Lewis L. McArthur, Kellogg Speed, Arthur Dean Bevan, Carl Beck, Daniel N. Eisendrath, Wesley J. Woolston, Edward L. Moorhead, Golder L. McWhorter, Harry Culver, Louis E. Schmidt, Herman L. Kretschmer, William Hessert and George D. J. Griffin. Dr. Griffin gives a general discussion of fractures, the longest monograph in this number. Dr. Herman L. Kretschmer describes adequately "Fulguration Treatment of Tumors of the Bladder"; Dr. Louis E. Schmidt considers the "Operative Treatment of Urethral Fistula and Strictures"; Dr. Harry Culver gives a good review of Pyelonephritis; Dr. McWhorter outlines the technique of the removal of needles in the hand, and the treatment by operation of "Dislocation of the Fifth Carpometacarpal Joint"; Dr. Edward L. Moorhead describes a series of fractures; also a splenectomy for pernicious anemia, which followed repeated transfusions. Dr. Woolston describes a case of "Malignant Disease of the Cervical Stump after Supra-vaginal Hysterectomy," and gives a summary of 60 cases reported in the literature. Dr. Daniel E. Eisendrath gives an interesting clinical lecture upon "The Acute Abdomen," a subject which he expects to continue in another lecture. Dr. Carl Beck describes the "Treatment of Phlegmon of Hands and Fingers," and also contributes an interesting paper on "Partial Rhinoplasty." Dr. Arthur Dean Bevan discusses a series of cases, including "Hemangioma of the Scalp," extensive skin grafting, and "Sarcoma of the Lower Jaw"; also "Carcinoma of the Larynx." "Technique of Operation Under Infiltration with Apothecin." Dr. Kellogg Speed describes "Transarticular Capsulorrhaphy on the Knee" done at a base hospital in active service; this has been contributed from France. Dr. Lewis L. McArthur describes "Tumor of the Pituitary Gland—Technique of Operative Approach," which in this case was through the left frontal region, together with the removal of the roof of the orbit.

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

A WORKING PROGRAM AGAINST INFLUENZA.

A WORKING program against influenza, prepared by an editorial committee of the American Public Health Association, and based upon papers, committee reports, and discussions presented at the meeting of the Association held in Chicago, Illinois, December 9-12, 1918, has lately been reprinted for distribution.

In order that the administrative health officials and others who have the protection of the public health in hand, might present the results of their observations, the American Public Health Association appointed four sub-committees which formed a general committee, of which Dr. Rupert Blue was Chairman, and Dr. W. W. Evans, Vice-Chairman, to report on and discuss the epidemic of 1918 in a three-day congress. The four sub-committees,—namely Sub-Committee on Bacteriology of the 1918 Epidemic of Influenza, Sub-Committee on History and Statistics of the Epidemic, Sub-Committee

on Administration of Measures for Relief, and Sub-Committee on Measures for Prevention, presented their reports to the General Committee and the results of their conclusions are contained in this bulletin.

In general it was conceded that although something is known concerning the nature of influenza, much remains to be determined and that it is necessary for health agencies to proceed in the light of present day knowledge and not to wait for a discovery of specific vaccines or sera for prevention or cure. It is expected that from time to time during the coming year there will be a recrudescence of this disease. It was therefore urged by the members of the committee that health departments be ready with plans for emergency measures, emergency funds, and that bacteriologic studies should be continued in the use of effective vaccines and culture sera. The epidemic has emphasized the great importance of these emergency measures.

The committee on bacteriology reports that the epidemic known as influenza is believed to be due to an undetermined organism, that the lowered resistance of the body as a whole allows the invasion of other pathological organisms and that the most important complicating infections are due to the influenza bacilli, different strains of pneumococci and different varieties of streptococci. It assumes that since the virus is unknown, vaccine is of benefit only in the secondary infections and that its efficacy is difficult to determine at present.

The committee on administrative measures for relief summarizes in a clear and concise manner (1) General Rules; (2) Preliminary Measures; (3) Current and Continuous Analysis of Case Situation; (4) Analysis, Augmentation, and Organization of Principal Facilities; (5) Social and Relief Measures; (6) Food; (7) Laundry; (8) Provision for Fatalities; (9) Education, Instruction, and Publicity; (10) Miscellaneous. Under each of these headings many phases of relief are considered and it would seem that if carefully adhered to, the methods suggested could not fail to produce excellent results in communities of all kinds.

The preventive measures were laid out in the following suggestions: A—Efficient organization to meet the emergency, providing for a centralized co-ordination and control of all resources; B—Machinery for ascertaining all facts regarding the epidemic; C—Widespread publicity and education with respect to respiratory

hygiene; D—Administrative procedures and Miscellaneous Considerations. Prevention in general was grouped under the following headings: (1) Breaking the channels of communication; (2) Immunization and vaccines; (3) Increased natural resistance of persons exposed to infection.

Although the committee has found it impossible to lay down rules for the guidance of all public health officials alike in preventive measures, it has, nevertheless, been able to state, and in an intelligent manner, certain general principles which, in the judgment of the Committee, are underlying administrative measures for the prevention of influenza. The application of these measures must be left to the community responsible for the protection of its public health; but in any case, the recommendations of the American Public Health Committee cannot fail to prove of value.

WORK OF THE INDUSTRIAL FATIGUE RESEARCH BOARD.

THROUGH the *British Medical Journal* the work of the Industrial Fatigue Research Board has been brought to our attention. Last May the Health of Munition Workers Committee issued its final report. This Committee, upon which Dr. Leonard Hill and Sir Walter Fletcher served from 1915, was dissolved early in 1918, but because of the general interest evidenced in this work and the excellence of its character, it was decided that such a field of endeavor was quite necessary in industry. Accordingly, the Department of Scientific and Industrial Research and the Medical Research Committee determined to establish a permanent organization. Since a knowledge of both medicine and industrial science are equally necessary for the success of such a project, these two factors working together for a common object agreed that the finances should be proportioned between the two boards. The functions of this joint committee, known as an industrial Fatigue Research Board, were "to consider and investigate the relations of hours of labor and of other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and to the preservation of health among the workers." The co-operation of employers and employed is secured by invit-

ing members of both groups to serve as temporary members of the Board. The Chairman, Dr. C. S. Sherrington, F.R.S., is Professor of Physiology in the University of Oxford; and among the other members of the Board are representative men in the medical profession and in the industrial world. Suggestions as to any problems needing investigation may be addressed to the Secretary, Mr. D. R. Wilson, H. M., Inspector of Factories; and the board endeavors to initiate, organize, and promote by research, grants, or otherwise, investigations in different industries, with a view to finding the most favorable hours of labor, spells of work, rest pauses, and other conditions applicable to the various processes according to the nature of the work and its demands on the worker. Such an organization for the investigation of the natural laws of industrial fatigue is well worth consideration and co-operation from the public and an appreciation of the splendid work thus far accomplished.

ROCKEFELLER FOUNDATION PLANS FOR 1919.

PLANS for the completion of its war work and for extensive public health and medical education have been formulated in the program of the Rockefeller Foundation for 1919. Dr. George E. Vincent, the President, has recently issued a statement concerning the activities to be pursued and the appropriations which will be made for the various studies and demonstrations during the year. It is estimated that the income for 1919 is about \$6,750,000 and of this sum \$2,264,130 provides for public health work and \$3,662,504 for medical education.

The Yellow Fever Commission, under General William C. Gorgas, hopes completely to eliminate this disease. The Commission on Tuberculosis in France, at the request of the French authorities, will continue its splendid work there; and in twelve of our states as well as in twenty-one foreign states and countries the hook-worm problem will be attacked. At the Johns Hopkins Hospital preparations have been made for special studies and demonstrations in mental hygiene, for a school of hygiene and public health, as well as for the development of public health nursing. Through the China Medical Board the development of train-

ing in modern medicine will be the chief work of the department of medical education.

The Foundation's war work for the current year divides itself into the following activities—for the War Demonstration Hospital, for the work of the medical division of the National Research Council, for assistance in care and treatment of soldiers mentally and nervously disabled, for payment on pledges made in 1918 to the United War Work Fund, and for work under the direction of the commissions on Training Camp Activities.

REPORT OF THE MASSACHUSETTS COMMISSION ON MENTAL DISEASES.

THE second annual report of the Massachusetts Commission on Mental Diseases summarizes its activities and the work of State Hospitals during the year 1917. The Commission has general supervision of all public and private institutions for the insane, feeble-minded, and epileptic persons in Massachusetts. The care rendered in State Hospitals has necessarily been somewhat lowered because of the demand in war service for physicians experienced in the care of nervous and mental diseases. During the year, the Massachusetts Committee for War Work in Neurology and Psychiatry has been organized and has cooperated with the war work committee of the National Committee for Mental Hygiene; a uniform curriculum in all the training schools for nurses has been instituted; the Commission has accepted a new form for reporting statistics which was recommended by the American Medico-Psychological Association; a bulletin, dealing with subjects of scientific interest, has been issued quarterly.

This second annual report contains records from State Hospitals, including the Worcester, Taunton, Northampton, Danvers, Westborough, Boston, Grafton, Medfield, Gardner, Monson, Foxborough, and Bridgewater State Hospitals; also of the mental wards of the State Infirmary, the Massachusetts School for the Feeble-minded at Waltham, the Wrentham State School, McLean Hospital, Elm Hill Private School, Terrace Home School, almshouses, and twenty-six private institutions.

The total number of persons cared for by these institutions in 1917 was 19,000; of this number, eighty per cent. were insane, fifteen per cent. feeble-minded, and four per cent. epileptic.

MEDICAL NOTES.

RED CROSS HOSPITAL AT NEUILLY.—The American Red Cross Hospital at Neuilly, organized by Americans in the first week of September, 1914, was closed on February 6, when the last American wounded were removed and started on their way home. This hospital has rendered excellent service during the war, and has won the well deserved praise of the French people.

BILL TO RESTRICT SALE OF PAREGORIC.—A bill has been proposed to place paregoric and camphorated tincture of opium in the restricted list of narcotic drugs. Assistant District Attorney Webber, appearing in support of the bill, explained the necessity for this legislation, and is reported to have said that this drug has been sold in pint and quart quantities since the sale of other drugs had been restricted by the 1917 legislation. In reviewing the situation in Boston at the present time in comparison with conditions two years ago, he stated that 60 per cent. of the users of drugs were now in prison and a large proportion of the remaining 40 per cent had left the state. In speaking of the effects of paregoric among children, Mr. Webber quoted prominent physicians throughout the country, who were agreed that paregoric stupefies children and retards their mental faculties.

Major F. G. Wheatley of the medical department of the Army, one of the three commissioners who framed the 1917 drug act, appeared in favor of the measure, and is reported to have said that the question of placing paregoric on the narcotic list was considered when the original measure was drafted, but that action was delayed after several conferences between the commissioners and druggists.

Dr. W. C. Woodward of the Boston Health Department and representatives of the State Department of Health also supported the measure. At the request of druggists, the hearing in opposition has been postponed for one week.

IMMANUEL KANT ON INFLUENZA.—A recent issue of *The British Medical Journal* comments upon Immanuel Kant's interest in influenza. Although the term "influenza" was not formally adopted by the Royal College of Physicians of London until 1782, the disease was known to Hippocrates and other ancient physicians. Many physicians of the seventeenth and eighteenth

centuries had written about the disease from the clinical point of view; but Immanuel Kant, who was especially interested in medicine, was one of the first to direct attention to its epidemiology.

"Towards the end of the eighteenth century influenza swept over nearly the whole world. It reached Siberia and Russia, China and India, in the autumn of 1781, and in the following December and February it invaded successively Finland, Germany, Denmark, Sweden, England, Scotland, the Netherlands, France, Italy, and Spain. Kant, in a 'Notice to Physicians' published in the lay press of Königsberg on April 18th, 1782, considered the disease in its relation to physical geography. He expressed the opinion that it was spread not only by atmospheric conditions but by infection conveyed by insects. The paths of communication between Europe and other parts of the world by sea and by caravan were, he thought, the means of conveyance of many diseases, and he found reason to believe that the Russian trade route to China by land had brought several kinds of harmful insects from the farthest East. The epidemic of 1781-82 spread along the Baltic coast till it reached Königsberg; thence it travelled to Danzig and Prussia. Kant's interest in influenza is shown by the frequency with which he refers to the subject. With the object of procuring further information he sent his 'notice' to Russia, and from Baron von Aesch, surgeon in the Russian army, he learned that in January, February, and March, 1782, a disease described as *febris catarrhalis epidemica benigna* prevailed in the Russian capital. It originated in Eastern Siberia, on the Chinese frontier, and spread through the whole of Russia."

THE INFLUENZA EPIDEMIC IN INDIA.—The epidemic of influenza has been severe in India. The *Times of India* for October 26 contained the following comments upon the conditions in India since the outbreak of the epidemic:

"From June 1st to 15th the daily mortality of the city was normal, 80 to 90; it suddenly began to increase on June 19th, reaching 230 on July 3rd; it declined to normal about July 22nd. The secondary rise began on September 12th, the mortality exceeded 730 on October 2nd; it began to decline on October 8th, and had fallen to 184 by October 22nd. The incidence rate in the summer epidemic was about 25 per cent. on Europeans and 33 per cent. on Indians employed in offices, mills, etc., but it was much lower upon the outdoor labor staff of the Health Department, being well below 10 per cent. Returns were obtained from employers of labour relating to a population of 100,000 in the first epidemic. The sickness rate was 29 per cent.; of these cases 1,640 died. The excess mortality for five weeks of the second epidemic was 13,277.

Bombay was not so severely attacked as some other cities. Poona registered 210 deaths on September 30th, which would have been equivalent to 1,830 in Bombay where 768 deaths were actually recorded. In Nagpur for the week ending October 14th the mortality-rate (reduced to an annual rate per mille) was 430.8, the worst week in Bombay similarly expressed showing 257.17. By the first week of December, the Bombay mortality-rate had fallen to the normal level, the total deaths for that week amounting to 590, an annual rate per mille of 31.32."

TYPHOID FEVER IN RUSSIA.—Recent dispatches from Petrograd report that there is an epidemic of typhoid fever in Petrograd. In one hospital in this city, twelve doctors and forty nurses have died of the disease.

WAR RELIEF FUNDS.—On February 10, the totals of the principal New England War Relief funds reached the following amounts:

Belgian fund	\$729,352.98
French Wounded fund	474,127.44
French Orphanage fund	454,855.21
Italian fund	278,260.99
Serbian fund	129,569.89
Russian fund	57,525.92

BRITISH MEDICAL SERVICE IN MACEDONIA.—A recent dispatch from General Sir George F. Milne, K. C. B., Commanding-in-Chief, British Salonica Force, describes the British medical service rendered during the operations of the British army in Macedonia from October 1, 1917, to December 1, 1918.

"All through the dispatch there are evidences of the way in which the army has been tried by disease; malaria and influenza had taken a heavy toll, both in strength and in numbers, but rather than miss the opportunity for which they had waited three years, officers and men remained in the ranks till often they dropped from sheer exhaustion. 'In this unhealthy climate,' General Milne continues, 'the efficient administration of the medical services is naturally of extreme importance, and in this respect a very high standard of efficiency has been attained. In an army saturated with malaria and passing through a severe outbreak of influenza, heavy calls were constantly made on the strength and devotion to duty of the Royal Army Medical Corps, of whose work I cannot speak too highly.'

"In further paragraphs General Milne writes of the indefatigable and devoted work of the nursing service and voluntary aid detachments during three years; in many instances they sacrificed their own health for the soldiers in their charge."

THE LIVERPOOL MEDICAL INSTITUTION.—The following note on the Liverpool Medical

Institution has appeared recently in *The British Medical Journal*:

"The report for the year 1918, presented to the annual meeting of the Liverpool Medical Institution in January, states that the number of members has diminished, owing to deaths and resignations during the war; but it is confidently anticipated that with the return of normal conditions there will be a large influx of new members. The library, to which numerous additions were made, has been largely used by medical members of the Overseas Forces and officers of the United States Medical Corps, who have also attended meetings in response to a welcome extended to them by the council. The Institution has decided to promote a memorial to the late Hugh Owen Thomas, the Liverpool surgeon famous throughout the world for his pioneer work in orthopaedics, and as the inventor of the splints which bear his name. A committee has been appointed, and will make an appeal early in the year. It is hoped to endow an oration to be delivered in the Medical Institution, and also to provide a bust, or some other permanent and visible memorial, of Mr. Thomas."

VICTORY OVER BLINDNESS.—"Victory Over Blindness" was the title of an address delivered at a mass meeting at the Century Theatre in New York City on the evening of February 4, by Sir Arthur Pearson, the blind founder and director of St. Dunstan's Hostel for blinded Soldiers, of London, England. Sir Arthur described his work in restoring blinded British soldiers to self-support.

Lieutenant Colonel James Bordley, in charge of work for blinded American soldiers and sailors and director of the Red Cross Institute for the Blind, told of the work being done at Evergreen, Baltimore, for men of the American Expeditionary Force who lost their sight in action.

The meeting was presided over by Douglas C. McMurtrie, director of the Red Cross Institute for Crippled and Disabled Men, under the auspices of which organization the meeting was held.

The blinded men at St. Dunstan's first "learn to be blind," according to Sir Arthur Pearson. In this process they are taught to go about independently, to use the typewriter, to write Braille, to dance, to row, and to play games of one kind or another. The next step is to teach the men some vocation by means of which they can support themselves comfortably. As many as possible are sent back to their former employment. Others learn to be expert masseurs, stenographers, carpenters, and so forth.

St. Dunstan's has an extensive after-care department which looks after the interests of the men after they have returned to their homes, sees to it that their training is effective, and that they are placed in employment or provided with home work.

APPRECIATION OF BRITISH MEDICAL PROFESSION IN THE WAR.—The following appreciation of the members of the medical profession who have served in the war has recently been adopted by the Council of the British Medical Association:

"The Council, joining in the praise given by all the nations of the British Empire to the brave men who, by their courage in battle, constancy in adversity, and endurance of hardship, have, with the aid of our Allies and the friendly American nation, brought us at length by victory to peace, desires in particular, speaking from fullness of knowledge, to place on record its sense of the greatness of the share of the medical profession in the struggle now happily ended.

"To every member of the profession, young and old, in the Home Islands, in the Dominions, in the Colonies, and in the Dependencies, came the call to service in various degrees. It came first to those who had felt it a patriotic duty in time of peace to fit themselves to serve in war—to the medical officers of the Royal Naval Volunteer Reserve, Territorial Force, and Special Reserve. They were mobilized in the first days of the war, they have served in all climes, not a few have given their lives, many have been invalidated by broken health, all have given of their best. The country owes them a very deep debt of gratitude.

"At a stage almost as early medical volunteers came forward, and among the medical officers with temporary commissions in the Home and Overseas contingents are indeed many who have served throughout the war.

"Honour has been won for their profession by the gallantry of medical officers in tending wounded in the field. The Council is proud to note that the Victoria Cross has been won nine times by medical officers in this war, and that the unprecedented honour of a bar to the Cross has been granted to two medical officers—Lieut.-Colonel Martin-Leake, who won the Cross in South Africa, and Captain N. G. Chavasse, who died of wounds received in doing the noble deeds for which the bar was granted. It is proud also to record that the Military Cross has been won by over nine hundred medical officers and that many bars have been granted; the Council congratulates these gallant officers on this recognition of their courage and devotion to the beneficent work of medicine in the field, and mourns the loss of so many brave men who died in the execution of a hazardous duty before such recognition could be given to them.

"The Council records also the striking success of medicine's peculiar work in war—the prevention of disease. The British armies in Flanders and Northern France have been guarded from those epidemics which often brought disaster in earlier campaigns in these regions. That this has been achieved and that certain new and less recognized diseases of armies have been controlled, has been due to the combination of clinical inquiry with pathological research in mobile and temporary laboratories working in the field or on the lines of communication. In the treatment of wounds also the principle of prevention has been applied with a degree of success never before approached under similar conditions. In the casualty clearing stations surgical skill of the highest order has been brought early to the wounded whereby many lives and limbs have been saved, and prolonged sickness and suffering prevented. In these matters also clinical experiences and pathological inquiry have worked together.

"The medical services of the Royal Navy have achieved results as admirable. Their work at sea has been of the most arduous nature, and the treatment of the sick and wounded ashore has been organized and carried through with skill and devotion.

"Recognition is due also to the staffs of the base hospitals in all the campaigns for their skill in treatment and research, and their untiring exertions, especially during periods when the wounded were being admitted in very large numbers.

"Finally, the Council places on record its appreciation also of the manner in which those members of the profession who remained at home responded to the many calls on their energies by their work in the general and auxiliary military hospitals established in all parts of the United Kingdom, and by the manner in which they rendered the requisite medical attention to the civilian population under difficult conditions. Owing to the shortage in personnel, the stress of work has been so great that the Council here also has to express regret that members of the profession have suffered impairment of health, and some of the elder men have made the supreme sacrifice in response to the call of duty to their country.

"Those who have rendered the services herein set out have deserved well of the country."

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending February 8, 1919, the number of deaths reported was 301, against 312 last year, with a rate of 19.71, against 20.78 last year. There were 46 deaths under one year of age, against 43 last year.

The number of cases of principal reportable diseases were: diphtheria, 87; scarlet fever, 29;

measles, 5; whooping cough, 12; typhoid fever, 1; tuberculosis, 44.

Included in the above, were the following cases of non-residents: diphtheria, 15; scarlet fever, 7; tuberculosis, 2.

Total deaths from these diseases were: diphtheria, 7; scarlet fever, 2; tuberculosis, 19.

Included in the above were the following non-residents: diphtheria, 1; scarlet fever, 2; tuberculosis, 1.

Influenza cases, 411; influenza deaths, 57, of which 8 were non-residents.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS.—A meeting of the Massachusetts Society of Examining Physicians was held at the Copley Plaza Hotel in Boston on February 13, 1919. The principal speakers were Dr. Cecil K. Drinker and Dr. Reid Hunt of the Harvard Medical School, and Major Murray, U.S.A., M.C.

NOMINATION OF MEDICAL EXAMINER.—Dr. David C. Dow of Cambridge has been nominated to succeed Dr. William D. Swan as medical examiner of the First Middlesex District. Dr. Dow is a graduate of Tufts Medical College. For years he has been connected with the Cambridge Hospital. Since the United States entered the war, he has been stationed at the naval training station at Bumkin Island, where he was in charge of the medical department.

DONATIONS TO HOSPITALS.—By the will of the late James Harrison Fay of Brookline, the sum of \$24,000 has been left to the Massachusetts General Hospital.

At the death of the wife of the late Arthur A. Smith of Somerville, the Somerville Hospital will receive \$5000, Somerville Home for the Aged, \$2000, Somerville District Nursing Association, \$2000, Perkins Institute for the Blind, \$10,000.

BOSTON MORTALITY RATES.—For the first time in many weeks the number of deaths from all causes in Boston was lower than for the corresponding week of a year ago. For the week ending February 8, there were 301 deaths, compared with 312 in 1918.

Diphtheria cases numbered 87 with seven deaths; scarlatina, 29 cases and two deaths; typhoid fever, one case; measles, five cases; tuberculosis, 44 cases and 19 deaths. Deaths from pneumonia numbered 32, heart disease 33,

and bronchitis four. There were 17 deaths from violent causes.

SPRINGFIELD ACADEMY OF MEDICINE.—The February meeting of the Springfield Academy of Medicine was held in Springfield on the evening of February 11. An address, "A Study of the Tonsil Operation," illustrated with lantern slides, was delivered by Dr. Clifford B. Walker, recently of the Peter Bent Brigham Hospital, Boston. Professor S. B. Betzler of Y.M.C.A. College delivered an address on "Gymnastic Re-education in Paralysis."

BOSTON CITY HOSPITAL UNIT.—The Boston City Hospital Unit, known officially as Red Cross Base Hospital No. 7, has received orders to return home, and is expected to arrive about March 1. It is believed that the unit is now at Brest, prepared to sail.

The first of the unit, consisting of doctors and some of the enlisted personnel, left Camp Devens in July; the last of the unit did not arrive on foreign soil until August 6. The unit was originally responsible for 1600 beds, at Tours; but later another building was constructed, giving it 1000 more patients to care for. Many letters commending the excellent work of the doctors and nurses have been received in this country.

The unit was commanded by Lieutenant-Colonel John J. Dowling. Lieutenant-Colonel Edward H. Nichols was chief of the surgical service, and Major John J. Thomas was chief of the medical department. There were originally fifty nurses, under the direction of Miss Emma M. Nichols, superintendent of nurses at the City Hospital; but this number was increased to one hundred, the additional nurses being selected from other hospitals. The unit was relieved by unit No. 120, which sailed from New York in November.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—On February 4, 63 cases of influenza and 13 of lobar pneumonia were reported to the Boston Health Department. Since that time, the number of cases reported has been as follows:

February 5, 80 of influenza and 16 of pneumonia; February 6, 72 of influenza and 13 of pneumonia; February 7, 57 cases of influenza and 8 of pneumonia.

The following deaths have been recorded:

On February 4, 15 deaths from influenza and

1 from lobar pneumonia; February 5, 7 of influenza and 15 of pneumonia; February 6, 4 deaths from influenza and 3 from pneumonia; February 7, 7 of influenza and 3 of pneumonia.

On February 8, 59 new cases of influenza and 14 of lobar pneumonia, with 10 deaths from influenza and 5 from pneumonia, were reported to the Boston Health Department.

For the week ending February 8, the total number of cases reported in Boston was 411 cases of influenza and 57 deaths, compared with 501 cases and 73 deaths during the preceding week.

On February 9, 39 cases of influenza and 8 of pneumonia, and 11 deaths were reported to the Boston Health Department. On February 10, 33 new cases of influenza and 5 of pneumonia, with 5 deaths from influenza and three from pneumonia, were reported.

On February 11, 78 new cases of influenza and 14 of pneumonia, with 9 deaths from influenza and 3 from pneumonia, were reported to the Boston Health Department. This increase is attributed by Health Commissioner Woodward to delayed reporting on the two preceding days. 30 of the new cases were from Ward 5, a congested section.

The Massachusetts Medical Society.

The next annual meeting will be held in the Copley-Plaza Hotel, Boston, June 3 and 4, 1919.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Elected by the Council, June 18, 1918.

President, Samuel B. Woodward, 58 Pearl Street, Worcester.

Vice-President, George P. Twitchell, 17½ Federal Street, Greenfield.

Secretary, Walter L. Burrage, 42 Elliot Street, Jamaica Plain.

Treasurer, Arthur K. Stone, Auburn Street, Framingham Center.

Librarian, Edwin H. Brigham, 8 The Fenway, Boston.

STANDING COMMITTEES.

Appointed by the Council, June 18, 1918.

Of Arrangements.—J. L. Huntington, R. H. Miller, C. H. Lawrence, Jr., Donald Macomber, A. W. Reggio, J. B. Swift.

On Publications and Scientific Papers.—E. W. Taylor, R. B. Osgood, F. T. Lord, R. M. Green, A. C. Getchell.

On Membership and Finance.—C. M. Green, A. Coolidge, Jr., Samuel Crowell, Alfred Worcester.

On Ethics and Discipline.—J. A. Gage, J. W. Bartol, Henry Jackson, T. J. Robinson, David Cheever. On Medical Education and Medical Diplomas.—H. C. Ernst, C. F. Painter, H. W. Newhall, J. F. Burnham, C. Frothingham, Jr.

On State and National Legislation.—S. B. Woodward, F. G. Wheatley, W. P. Bowers, E. H. Stevens, A. R. Crandell.

On Public Health.—E. H. Bigelow, W. I. Clark, Annie L. Hamilton, E. F. Cody, M. V. Safford.

OFFICERS OF THE DISTRICT MEDICAL SOCIETIES, 1918-1919.

Elected by the Societies.

BARNSTABLE.—E. S. Osborne, West Dennis, President; F. A. Binford, Hyannis, Vice-President; C. J. Bell, Wellfleet, Secretary; H. B. Hart, Yarmouthport, Treasurer; E. E. Hawes, Hyannis, Librarian.

BERKSHIRE.—Vanderpool Adriance, Williamstown, President; E. H. Taylor, Pittsfield, Vice-President; O. L. Bartlett, Pittsfield, Secretary; J. D. Howe, Pittsfield, Treasurer.

BRISTOL NORTH.—W. H. Allen, Mansfield, President; H. G. Ripley, Taunton, Vice-President; A. R. Crandell, Taunton, Secretary; Ralph D. Dean, Taunton, Treasurer.

BRISTOL SOUTH.—J. A. Barré, Fall River, President; E. D. Gardner, New Bedford, Vice-President; A. J. Abbe, Fall River, Secretary and Treasurer.

ESSEX NORTH.—F. E. Sweetsir, Merrimac, President; J. J. O'Sullivan, Lawrence, Vice-President; J. Forrest Burnham, Lawrence, Secretary and Treasurer.

ESSEX SOUTH.—J. J. Egan, Gloucester, President; C. M. Cobb, Lynn, Vice-President; H. P. Bennett, Lynn, Secretary; G. Z. Goodell, Salem, Treasurer; C. M. Cobb, Lynn, Librarian.

FRANKLIN.—Charles Moline, Sunderland, President; J. A. Mather, Colrain, Vice-President; F. A. Millet, Greenfield, Secretary and Treasurer.

HAMPDEN.—A. L. Damon, Wilbraham, President; G. L. Gabler, Holyoke, Vice-President; H. L. Smith, Springfield, Secretary and Treasurer.

HAMPSHIRE.—W. H. Adams, Northampton, President; Sidney A. Clark, Northampton, Secretary; J. G. Hanson, Northampton, Treasurer; F. E. Dow, Northampton, Librarian.

MIDDLESEX EAST.—M. D. Sheehan, Stoneham, President; R. D. Perley, Melrose, Vice-President; Paul H. Provandie, Melrose Highlands, Secretary; Richard Dutton, Wakefield, Treasurer; G. W. Nickerson, Stoneham, Librarian.

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SUFFOLK.—J. B. Blake, Boston, President; G. G. Sears, Boston, Vice-President; George R. Minot, Boston, Secretary; J. L. Huntington, Boston, Treasurer; W. P. Cones, Boston, Librarian.

WORCESTER.—W. L. Johnson, Uxbridge, President; W. J. Delahanty, Worcester, Vice-President; G. A.

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WORCESTER NORTH.—A. P. Lowell, Fitchburg, President; C. E. Woods, Lunenburg, Vice-President; F. M. McMurray, Fitchburg, Secretary; F. H. Thompson, Jr., Fitchburg, Treasurer; A. P. Mason, Fitchburg, Librarian.

Obituaries.

WILLIAM HENRY BUFFUM, M.D.

DR. WILLIAM HENRY BUFFUM of Providence, who died Oct. 13, 1918, is the first member of the Providence Medical Association to make the supreme sacrifice in the line of duty in the world war. He was buried from Grace Church, with military honors, on Dec. 2, 1918.

His father, the late George A. Buffum, was from a family prominent on the Island of Rhode Island for several generations; his mother, Harriet Mitchel, is the daughter of the late John Alden Mitchel, and through her mother related to the Paine family.

Dr. Buffum, thus of substantial Rhode Island stock, was born in Providence, June 25, 1877; he prepared for college at the well-known Mowry and Goff School, took his A.B. degree at Brown University in 1898, and graduated in medicine, with honors, from Harvard University in 1902. In the Medical School he was a charter member of the Esculapian Society.

After serving as medical interne in the Massachusetts General Hospital in 1902 and 1903, he entered upon the practice of medicine in his native city, serving as interne in the Providence Lying-in Hospital the first six months. At his death he was one of the visiting staff.

He was appointed medical interne to the Out-Patient Department of the Rhode Island Hospital in October, 1903; Visiting Physician to the Out-Patient Department for Children's Diseases in January, 1906; Physician to the House for the new Clinical Department for Infants Affected by Diseases of the Digestive Organs in July, 1912. This position he held at his death.

Coming to the Rhode Island Hospital after creditably completing his internship in the near-by institution, under distinguished clinicians, bringing its traditions with him, he brought also his own enthusiasm, goodfellowship and ability. Being especially interested in children's diseases, it was mainly through his energy that the Department of Children's Diseases at the Out-Patient Department was established, and he

was also, later, instrumental in establishing the new Clinical Department for Infants, of which he was made Visiting Physician. In his treatment of patients, whether rich or poor, he was wondrously kind and sympathetic, always ready with cheering words, and the tiniest patient never feared him. With his many good qualities, his loss to the hospital is deeply felt.

Among the first to enlist in the medical service of the world war, he joined the Rhode Island Naval Base Unit, ranking as lieutenant, senior grade, and went to the Naval Hospital at Newport, R. I., last May. Ordered abroad, he sailed from New York on the *Oxfordshire*, Sept. 25, 1918. After devoted work among the troops in the influenza epidemic that broke out on the crowded transport during a long, perilous, stormy passage, he landed in Liverpool on October 8, 1918, with the early signs of the disease developing in himself, and proceeded at once to a hotel there. Two days later he developed pneumonia and was sent to the Great Western Army and Navy Hospital, where he died after several hours of unconsciousness, on October 13.

He married, November 1, 1904, Edith Campbell, daughter of James M. Campbell of Providence. She, and one son, survive him, while another son, two years older, died four years ago. His mother and brother, G. Mitchel Buffum, live in California.

The sudden and lonely death of Dr. Buffum, in a foreign hospital, far from home and friends, has cast a gloom not only over his personal friends, but in many households in this vicinity. All those who knew him, both professionally and socially, have a strong feeling of personal loss. His winning manner, his sweet kindliness, his loving sympathy in time of trouble deeply endeared him to the families he was accustomed to attend.

At first a family practitioner, in the right sense, and, as such, a friend and adviser, of late years, he had devoted his abilities to the digestive troubles of infancy and childhood, and was widely and favorably known throughout this State for his success in that special branch of medicine. Many children and parents, far and wide, have for him a lasting feeling of friendship and gratitude and bear a debt they can never repay to one who has made their bodies strong and their lives worth living.

He was indeed the beloved physician, and our happiness has been greater and our faith in human nature stronger for having known him.

As a man, he was without fear and without reproach.

He as truly fell in the service of his country as if he had fallen gloriously on the field of battle. He fell between two posts of duty and none the less was the glory of his fall.

We ask to associate ourselves with his family in their proud sorrow, and we salute reverently the grief of his brave death.

FRANK L. DAY,
FRANK M. PETERS,

*Committee,
Providence Medical Association.*

THOMAS BUZZARD, M.D., F.R.C.P.

THOMAS BUZZARD, M.D., F.R.C.P., died in London on January 1, 1919, in his eighty-eighth year. He was born in London and received his early education at King's College School. At the age of fifteen he became apprenticed to a doctor and later studied at King's College Hospital. He received the degree of M.R.C.S. in 1854, and served in the cholera epidemic in Soho during that year. He took part in the Crimean War and assisted the establishment and conduct of a base hospital at Trebizond. For his excellent services he received the Crimean Medal, with the Clasp for Sebastopol, the Order of Medjidie, and the Turkish War Medal. Dr. Buzzard returned to England and graduated M.B. Lond. (1857). In partnership with Mr. J. G. French, F.R.C.S., he held the position of parish doctor to the St. Luke's district of St. James' Parish.

After six years, Dr. Buzzard retired from general practice. His journalistic work led him to the National Hospital for Paralyzed and Epileptic, where he eventually became physician. His connection with the hospital aroused his interest in neurology, and he gradually came to be one of the leading neurologists in London. Dr. Buzzard contributed several articles to Quain's *Dictionary of Medicine*, and an important paper on retro-ocular neuritis to the *Transactions* of the Ophthalmological Society, in 1897. Dr. Buzzard was one of the leaders of the etiological movement. He contributed an interesting paper on the influence of microorganisms and their toxins in the production of diseases of the nervous system to the Section of Neurology at the annual meeting of the British Medical Association, in Edinburgh, in 1898. Two

years later, at the annual meeting at Ipswich, he was president of the Section of Medicine, and took an effective part in the discussion on influenza as it affects the nervous system.

Dr. Buzzard married in 1869 and continued his practice for a number of years. He was president of the Clinical, Neurological, and Harveian Societies, vice-president of King's College Hospital, and a corresponding member of the Société de Neurologie, Paris.

An appreciation of his work and character by his colleague and friend, Sir David Ferrier, indicates the esteem in which Dr. Buzzard was held by the medical profession and by his friends:

"Dr. Buzzard was a happy combination of qualities of the head and heart which gained him a distinguished professional reputation and endeared him to a large circle of friends and acquaintances. We have travelled far in neuro-pathology since Buzzard was an active contributor to medical literature, but nothing has surpassed the accuracy of his observations and delineation of the symptoms of nervous disease. The 'sudden giving way of the legs' in locomotor ataxy ('Buzzard's symptom') is a classical example.

"Clinical work was Buzzard's forte, and nothing was more noteworthy than the laborious care with which he observed and recorded his patients' symptoms and the effects of treatment. He was a highly successful practical physician. Not only in professional matters, but in affairs in general, Buzzard was a man of great caution and sound judgment, and was regarded by his colleagues of the National Hospital as the 'Nestor' of the staff.

"Buzzard had a quiet, genial manner and catholic sympathies. He had many friends, not only in medical but in the most diverse circles, particularly artistic. He was himself an artist of considerable merit, and it was his chief pleasure during his holiday rambles in various parts of the world to make water-colour sketches of the places he visited. In later years he loved to show these to his friends, and recall the pleasant memories with which they were associated.

"Owing to the infirmities of age, Buzzard had, for several years past, ceased to concern himself with medical questions, but he

kept up an active interest in the events of the day, and spent much of his time in the Arts Club or Athanæum, where he read quietly or enjoyed pleasant intercourse with his many friends."

SIR CHARLES WYNDHAM, M. D.

It is seldom that a physician attains distinction as an actor. Sir Charles Wyndham, who died on January 12th in his eighty-second year, is an example of a man who turned away from the medical profession and achieved success in another calling. In the comedy of society, he was one of the most accomplished of the British actors of his time, and his genius was a constant source of delight to his audiences. *The British Medical Journal* gives the following account of his life and achievement:

"He was born in Liverpool, the son of a medical practitioner named Culverwell, who during his son's boyhood practiced in London. Charles Culverwell was from the first enamoured of the stage, but the father's influence kept him to his medical studies at King's College sufficiently closely to ensure his passing the examination for the Membership of the Royal College of Surgeons of England in 1857. In 1858 he obtained the College Licence Midwifery. His intellectual capacity would have won him distinction in any profession. His versatility and knowledge of men and the world owed something to the circumstances of his education, in Scotland, in Germany, and in London. He appears to have attended the School of the Royal College of Surgeons in Ireland and the School of Anatomy in Dublin. In the *Medical Directory* for 1860 he appeared as M.R.C.S. 1857, L.M. and L.S.A. 1858, and M.D.Giessen (exam.) 1859. A motive that may have stimulated his keenness to obtain a medical diploma was an ardent desire to serve America in the civil war. He went to America, and after several disappointments was appointed surgeon in the Federal army. He was present at the battles of Chancellorsville, Fredericksburg, and Gettysburg, and served through the Red River campaign under General Banks. He had always had a strong inclination for the stage and found opportunities during the winters of the war to play in New York as 'Charles Wyndham,' under which name he was to become so widely known. He returned to England in 1865 and gradually won for himself a leading place on the comedy stage. He went to America in 1869 with a repertory including *The School for Scandal*, in which he gave an inimitable presentation of Charles Surface. He first established himself as an actor manager in London in 1875, and his shrewd judgement and accomplished business management made him one of the most successful managers of his day. He

gave up management in 1910, and gradually retired from the stage; during the last few years he had been in declining health. When in 1902 King Edward conferred upon him the honour of knighthood, it was felt to be a due recognition of a position attained by a combination of genius and hard work."

Miscellany.

SOCIAL INSURANCE IN GERMANY.

AN article on "Social Insurance in Germany," by Frederick L. Hoffman, has appeared in a recent issue of *The Spectator*, New York. It describes the physical deterioration of the working people in Germany and shows that the system of social insurance, as carried out in Germany, is a complete failure. The following extracts, based on information gathered from the Annual Reports of the Communal Sick Funds of several of the largest cities in Germany, have been taken from *The Spectator*, New York.

The reports at the outset draw "attention to the unfavorable hygienic results of the war, chiefly in consequence of the deficient nutrition of the population, resulting in a material increase in the frequency of diseases of the stomach and intestines and a reduction in the successful treatment of tuberculosis and related diseases, where the treatment primarily depends upon wholesome food in sufficient quantities. It is readily conceded, therefore, that there was an actual increase in the number of deaths in the experience of the Fund, from 1,782 in 1916 to 2,225 in 1917, primarily in consequence of the under-nutrition of the population ("Lunge oedema" is the term officially used in the report). The observation is made that the effect of physical deterioration had not become so apparent in 1916 in consequence of the conditions in 1915, as during 1917, largely because during the latter year and without reference to existing illness many of the members 'continued to work to the point of complete exhaustion.'

"Because of the larger amount of sickness and its prolonged duration there was an increase in expenditures for pecuniary support during sickness of 1,015,000 marks, aside from an increase in the expenditures for medical treatment of about 132,000 marks, for medicines, etc., of 110,000 marks, for hospital treatment of 132,000 marks, and for additional financial support of about 60,000 marks.

"A plan was therefore inaugurated by providing for those on the sick list at least one wholesome meal a day, but under very strict regulations, to preclude conflict with the elaborate food-rationing system for the population at large. This experiment, however, was limited to a maximum number of 750 persons of the Fund membership of 168,000. The experiment was not a success, for reasons not made clear in the report.

"The number of male members in the compulsory insurance section has been reduced by more than one-half, and whereas in this section in 1913 the proportion of women members was only 31.1 per cent., the proportion by March 15, 1918, had increased to 56.5 per cent. It may probably be safely assumed that the male membership consists almost exclusively of men entirely unfit for military duty and that the reduction in the male membership is far from having been made good by the admission of women workers whose age and marital condition, unfortunately, are not stated in the report.

"The administration of the Fund during the war has apparently been extremely lax and in disregard of elementary insurance considerations. As far as it is possible to judge, there has been entire freedom in matters of individual or family sick support, regardless of the practical cessation of contributions from the many members called out for military service. Much is therefore being done for the families of the injured and the killed, which, however laudable from a humanitarian point of view, cannot but imperil the future financial security of the institution. The sickness rate in the compulsory insurance branch of the Fund increased from 31 per cent. of the membership in 1915 to 37 per cent. in 1916 and 46 per cent. in 1917. The death rate of the entire male membership of the Fund increased from 9.0 per 1,000 in 1914 to 20.2 (including, however, members in military service) during 1915. The rate diminished to 16.6 during 1916, but increased to 22.8 during 1917. There was also an increase in the mortality of the female membership from 6 per 1,000 during 1914 and 1915, and only 5.4 per 1,000 during 1916 to 7.3 per 1,000 during 1917. This increase in the death rate during the last year under observation has, unquestionably, a direct bearing upon the lamentable food situation, or, in other words,

is directly attributable to starvation, or semi-starvation, as the case may be.

"It is, however, apparently quite clear that the financial condition of the Fund cannot be otherwise than precarious. The reserve was reduced to the amount of 649,000 marks, in consequence of the large expenditures for sick support, etc. The per capita management expenditures were also higher than during any previous year in the experience of the Fund, or, respectively, 3.83 marks per member in 1913, against 5.57 marks in 1917. The evidence of an excessive amount of malingering is overwhelming. Out of 5,881 cases of sickness especially investigated, 48 per cent. were found to be persons fully capable of self-support, and 11 per cent. in addition were warned and made to return to work at the end of the current week for which compensation was paid. Only 29.6 per cent. were found to be really deserving of sick support or unable to work. These figures vary more or less from year to year, but at no time in the past has the proportion of cases properly entitled to sick support of those actually receiving sick benefits been as low as during 1917. In other words, there can be no question of serious doubt that the resources of the sick fund are being used in an improper manner, to amplify an otherwise deficient family income and that the entire experience of the Fund clearly reflects the deplorable physical deterioration of one of the most representative cities of the German Empire, in consequence of the war.

"An increase in the contributions has naturally been strongly resisted by the membership. At an extraordinary meeting held in Munich on April 13, 1917, the demand was made that in consequence of 'the enormous increase in prices of all the necessities of life,' the sick pay should be increased from 50 to 75 per cent. of the normal earnings and that such pay should commence from the first instead of the fourth day of sickness, when of longer than one week's duration, or followed by death or by an industrial accident. It was pointed out that on account of the diminishing purchasing value of German money, the amounts actually paid were entirely insufficient for the legitimate needs of the sick. It was therefore suggested that the required amounts should be raised, not by an increase in contributions, but 'by the use of the reserve fund.' This request

on the part of the employees, or the insured, was strongly opposed by the employers, but apparently the former, being in the majority, carried their point and secured the adoption of a measure which, if persistently followed, must of course lead inevitably to actuarial insolvency of the funds, if, in fact, such insolvency is not already a common feature to all the funds at the present time.

"The tendency in the administration of German Communal Sick Funds is obviously in the direction of the gradual conversion of such funds into public institutions for the administration of public charity and relief. The explanatory text of the annual reports emphasizes more and more the demands made upon the funds, other than such as would legitimately arise out of the contractual relationship of the parties concerned. After stating, for illustration, that the number of patients unable to work in the experience of the Munich Communal Sick Fund increased from 66,614 in 1916 to 72,765 in 1917, and that this increase was on account of 'the very heavy deprivations and increased physical demands in consequence of the war,' it is said further that 'the results have naturally been felt by the Sick Funds and that bodily weakness and under-nourishment frequently constitute the principal cause of incapacity for work on the part of the members of the fund.' Such conditions, it is further pointed out, are responsible also for an increase in the frequency of tuberculosis, the control of which, with an increase in the cost of living, as shown by the actual increase in the number of deaths, has become more and more difficult. Since 1913, it is stated in the report, the number of deaths from tuberculosis (probably in the city of Munich) had increased by more than 50 per cent.

"The experience of the German Communal Sick Funds during the war is necessarily inconclusive on many of the broader aspects of Germany's physical deterioration during the last four years. The reports, nevertheless, reflect a truly lamentable condition, which, in time, must react disastrously upon the finances and the actuarial solvency of the funds, which, on the undemocratic principle of compulsory thrift, have virtually been made the chief depositories of the savings of the German working people. Though ostensibly managed by the insured, they have practically become state in-

stitutions, to be managed by the authorities for whatever governmental purposes may require. Their reserves, probably never sufficient for the ultimate needs of the future, are being heavily drawn upon for war purposes. The invested funds are largely being converted into war loans, so that with the inevitable results of a depreciation in the value of all German securities the outlook for the future on the part of these institutions is decidedly discouraging. The most serious aspect of the experience during the last two years is, however, the increased physical deterioration of the German working people, both men and women, best emphasized in the following extract from the medical report of one of the sanatoria under the control of the Munich Communal Sick Fund, to the effect that, 'Nearly all the patients arrive at the institution in a more or less alarming condition of under-nourishment. Many of them, also, exhibit unmistakable signs of war consequences in the larger degree of frequency occurrence of nervous diseases.'

BRITISH APPRECIATION OF HARVARD UNIT.

THE Harvard Surgical Unit, whose active work in France has just been brought to a close, was organized in the Harvard Medical School under the leadership of Dr. Edward H. Nichols, and arrived in France early in July, 1915. Soon afterwards, by arrangement with the British Army medical authorities, it took over No. 22 General Hospital at Camiers, one of the large base hospitals which had been erected in the Etaples area. The following account of the activities and excellent service rendered by this unit appears in a recent issue of *The British Medical Journal*:

"It was originally intended that the work should be carried on after the first three months by relays of surgeons from one or two other American universities; but owing to unforeseen circumstances this idea was given up, and Harvard alone continued to be responsible. The unit was organized on the pattern of a base hospital in the British regular service. The officers did not receive commissions, but relative rank was given according to the duties they were to perform.

"In November, 1915, on the arrival of the second party of surgeons from Harvard, the hospital moved into winter quarters at Wimereux, but early next year it was back again at Camiers, near its former site, between the railway and the foot-hills, where it remained until the end.

"During the battle of the Somme in 1916 the

unit for the first time got really busy. Up to the end of that year its position was that of a neutral medical unit under the terms of the Geneva Convention, the administrative officers and the 'other ranks' alone being drawn from the R.A.M.C. In December considerable changes were made. The President and Corporation of Harvard University resolved to continue the unit for the period of the war, and requested the British military authorities to notify it as a belligerent medical unit. Temporary honorary commissions in the R.A.M.C. were given to officers enlisting for the duration of the emergency. In this way the unit was put on a more stable basis and its position was regularized. The entry of the United States into the war in April, 1917, had a somewhat unsettling effect on the status and personnel of the hospital, but within a few months the staff had settled down again as a harmonious party of Americans, Canadians, and British, with Lieut.-Colonel Cabot as Commanding Officer. During that year the hospital got through a tremendous amount of hard work. Its full nominal capacity was 2,370 beds, but the patients at one time numbered as many as 4,000. Besides their work at the base the members of the medical staff were given many opportunities for gaining experience and lending valuable aid in other parts of the war area. Almost every officer went up the line—some went in surgical teams, others in medical 'chest' teams, and there was scarcely ever a time when members of the staff were not scattered over France serving temporarily in one or other kind of medical unit of the British army.

"In the winter of 1917-18 a great many hernia operations were done, under local anaesthesia, in order to render soldiers fit for general service. From August, 1918, onwards a large amount of experience was gained in the practice of delayed primary suture of wounds at the base, more especially in cases of compound fractures of the arm and hand. Notes were kept of the first thousand patients thus treated by primary suture more than forty-eight hours after being wounded, and material was obtained for comparative analysis of the results. More than 85 per cent. of the cases healed by first intention. Colonel Cabot and his staff were among the first to obtain sanction for the routine employment of women anaesthetists. Nursing sisters were selected for courses of instruction in anaesthesia, and for the last two years all the anaesthetics of the hospital were administered by women. Members of the staff had a considerable share also in effecting the introduction of blood transfusion as a working method of resuscitation.

"When the end of hostilities came into sight steps were taken to disband the Harvard Unit early. On January 8th the entire medical and nursing staff left Camiers, and crossed to England on their way home to America. Beyond the practical aid given to some 175,000 British sick and wounded, the Harvard Surgical Unit has contributed in no small measure towards that

Anglo-American unity upon which we believe the happiness of the world will in large measure depend. We therefore share the hope expressed by Colonel Cabot that the Harvard unit will not disappear now that its working days are over, but that it will survive in some permanent form as a landmark in the progress of the English-speaking fellowship of medicine."

In behalf of his government, the Right Honorable Arthur H. Balfour, Minister of Foreign Affairs for Great Britain, has expressed appreciation of the services of the Harvard Surgical Unit in a letter to President Lowell of Harvard University.

"My Dear Mr. President:

"Now that the Harvard Medical Unit has fulfilled its noble mission to the British troops in France, and has earned the tribute of their undying gratitude, I desire to offer to that splendid organization some expression, however inadequate, of my deep appreciation of the great work that it has performed.

"It would have given me the utmost pleasure to have conveyed this message in person when the unit passes through London on its way home to the United States. But this, unfortunately, is denied me, since in mid-January I myself shall be engaged at the peace conference in Paris.

"May I, therefore, count on your good offices to let every member of the unit know how grateful his majesty's government feels for the generous offer made and carried out in December, 1916? Through two strenuous and memorable years the work of General Hospital 22, the largest hospital unit serving with the British army, has held a record for skilful and untiring treatment of our wounded.

"The memory of so much service and self-sacrifice can never pass from us; it will be cherished in perpetuity by the relatives and friends of those whom the Harvard unit has tended with such admirable devotion.

"Let me wish to one and all of our fellow-workers in the war a safe return from the scenes of their labors. They have added lustre even to the fame of Harvard, and have forged a new and enduring link in the bonds of loyal regard by which we should ever be united. Believe me, my dear Mr. President.

"ARTHUR JAMES BALFOUR."

It is with a feeling of pride in the spirit and achievement of the profession that we accept these worthy tributes to the members of the Harvard Unit.

PHLEBOTOMUS FEVER.

THE *Lancet* has recently published the following account of phlebotomus fever,—a tropical disease produced by the *Phlebotomus papatasi*, a semi-transparent, yellowish fly

found chiefly on the shore of the Mediterranean:

"The flies specially dislike wind, so they are not found on the hills, even as low as 600 feet. They dislike bright light and complete darkness, yet they hide themselves in holes. In houses they may cover the walls 'as if sown.' The female bites especially in the gloaming and at dawn. It makes many punctures, and after several suction becomes sluggish, so is easily caught in the morning or destroyed. The flies bite through linen. Thick socks or gloves probably protect, and so does fine gauze. Ventilation is necessary as well, for in an ill-ventilated room they can creep through a gauze-mesh, but they cannot pass if there is a draught. The floor of a hut should be concreted, as they come out of holes in the ground. They dislike cigarette smoke and alcohol fumes, so it is not surprising that the Turks smoke numerous cigarettes. Dr. Brack, who served with a German detachment in Turkey in 1916, noted that:

'In May there were none of these flies, but four cases of three-day fever occurred. The flies and the cases became very numerous in June, July, and August, but ceased by mid-September, when the flies disappeared. These cases seriously diminished the battle-worthiness of the troops. The flies were very troublesome. The individual sting is painful, but, in fact, the stings were so numerous as quite to prevent sleep, and men's faces swelled up out of knowledge. Sometimes a vesicle would form, sometimes even a blister. In one case the numerous blisters were filled, not with serum, but with blood. All Dr. Brack's men got the fever; incubation, four to ten days; rapid pyrexial onset; fall by lysis usually in two or three days. The highest pyrexia occurred among men working in the sun. The fever was disabling, and was followed by great desire for sleep, weakness, headache, and loss of appetite, constipation usually, sometimes diarrhoea, which might even be bloody. No exanthem, but a conjunctivitis very frequent, rarely purulent. Patient usually laid aside for ten days and relapses occur. Generally the fever is lower the second time. As to treatment, and first as to prophylaxis: A skilful medical officer should advise in the choosing of a camp, on a site lying high, exposed to the prevailing winds, and, if possible, on the reverse slope of a hill, so as to be protected from the enemy. The horse-lines should be far from the men's tents. The best treatment is to leave the patients at rest, little disturbed by questions, only a few words of encouragement given them. Keep their surroundings quiet and free from flies. Encourage sweating, by fomentations to the chest, hot tea, and 30 gr. aspirin. Calomel, 4 to 6 gr., is useful, and opium if diarrhoea is severe and with blood.

Zinc does no good to the conjunctivitis, hot sandbags are useful for the muscular pains, and invaliding home is required if debility is severe. The disease may become chronic unless the medical officer treats it energetically. Immunity is not acquired. As to *differential diagnosis*: Malaria never came in question here, though many blood smears and deep drops were examined; anopheles were never found in the camp. Dengue was considered, but there was no eruption on the third day, nor were there joint pains, nor bronchitis, and dengue began later in the year usually. Dysentery never occurred in the camp, so what diarrhea occurred was due to the phlebotomus fever. Each case required complete examination. The epidemic commenced among men on stable guard, and there was a short illness epidemic among the horses at that time; two days of fever, with marked subsequent debility, no diarrhea; but though these flies were prevalent, they were never noticed to settle on the hairless regions of the animals.

Dr. Brack hopes to be able to protect his men from the flies on these lines in another year."

A TRIBUTE TO THE LATE DR. PUTNAM.

The following tribute to the life and character of the late Dr. James Jackson Putnam, by H. Addington Bruce, has appeared recently in the Associated Newspapers under the title of "Lives that Illumine." It deserves republication, as a worthy estimate of a distinguished member of the Boston profession.

"There are some men whom to know is more than a delight. It is an inspiration, an illumination. Such a man recently passed away in Boston when James J. Putnam died.

"Craving ever to be of service rather than to win renown, Dr. Putnam, years before his death, was internationally known for his work in medicine and psychology. He was one of the first among American physicians to appreciate the kinship between the two sciences, and the progress of medical psychology in the United States owes much to his courageous efforts.

"Courageous, because the establishing of medical psychology as a recognized aid in healing required first of all the overcoming of many prejudices. Open hostility, criticism, even ridicule and contempt had to be faced by any physician rash enough to advocate the claims of mental medicine.

"Dr. Putnam faced all this unhesitatingly. Conscious of insight into truths which should be universally accepted, he persistently urged these truths upon his colleagues. And in the urging, to the great gain both of civilization and of suffering humanity, he had the advantage of his rare personality.

"Of uncommon intellectual vigor, one of his outstanding traits was the noble simplicity that characterized his friend, the great philosopher, Josiah Royce. The tolerance of their mutual friend, William James, did not excel the tolerance of James Jackson Putnam. He could sympathize with an opponent even in the heat of combat.

"Such a man is always hard to overcome. As the champion of a good cause there is no overcoming him. And, in fighting for scientific recognition of the strange powers of the mind in both causing and curing disease, Dr. Putnam was fighting for one of the best of causes.

"It was my good fortune to have occasional opportunity to discuss with him problems he had much at heart. Some of these, at my urgent request, he ultimately dealt with in his remarkable book "Human Motives," a book that will repay attentive reading. It gives men clearer knowledge of the nature of their being, and it is a stimulus to higher, finer thinking.

"And James J. Putnam himself was a stimulus to that. Always I came away from our talks mentally re-invigorated. Nor could it be otherwise, so radiant was he with the strength of sincerity.

"This, indeed, is the cardinal fact in all lives that illumine. They are, above everything else, sincere. Given intellectual force, sweep of imagination, keenness of vision, yet illumination for others will not follow unless sincerity be there.

"Which is a truth it would be well for every one of us to keep in mind."

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Correspondence.

THE APPLICATION OF ETHICAL ECONOMICS TO MEDICAL PRACTICE.

Seattle, Washington, Jan. 9, 1919.

Mr. Editor:

Prior to this war various evolutionary forces, without intelligent aid or organized assistance on the part of the medical profession, gradually compelled and still are compelling the followers of medicine into:

1. Accepting the specialist.
2. Demanding hospital facilities,
3. Associating and segregating into more or less organized groups,
4. Establishing private clinics, as The Mayo Clinic and similar institutions,
5. Establishing, as just instituted by Columbia University of New York, a still more advanced form of scientific medical organization, a clinical laboratory.

The same evolutionary forces have caused the laity:

1. To form mutual benefit organizations for the sick,
2. To demand contract practice,
3. To form hospital associations,
4. To demand state aid,
5. To demand free clinics.

In every one of these vitally important politico-economic movements, and in view of the fact that

millions of men will return after the war and demand for themselves and for their families the same scientific treatment they have experienced under military organization, medicine as a profession has failed to recognize the same exciting cause in each instance—an economic demand that the theoretical standard of efficiency, "Medical Ethics," must be replaced by a more practical standard, "Ethical Economics." This standard demands the application of scientific methods, through economic organization, to every-day life, so that efficient medical and surgical treatment will come within the reach, not of the few who can receive hospital treatment in standard institutions, but of every human being.

Confronted by the above politico-economic facts, a very pertinent question presents itself to the medical profession at large: What is medical organization—medical education—doing to solve these problems, at a time when an imminent reconstruction period confronts every form of organized society, including the profession of medicine?

Based on observation and experience of 20 years, the writer claims that virtually nothing practical has been systematically undertaken.

Nowhere is there evidence that medical organization—medical education—has ever recognized three basic psychologic factors that govern all intelligent human acts:

1. One hundred per cent. of the representatives of medicine, physicians, are human beings, and the minds of the highest and lowest are compounded of the same elements, held subject to the same laws of action; and the knowledge that any one of them possesses comes—as it does to every other human being—through the ordinary channels of the senses.

2. In the search for knowledge in every branch of human society, including medicine, science has produced innumerable mechanical aids to increase the efficiency of the senses of man. Therefore, logically, all things being equal, the mind of man gathers knowledge in proportion (a) to the number of mechanical aids employed to increase the efficiency of the senses; (b) the accuracy with which these aids are employed.

3. As a rule, normal human emotions govern every human being, including the physician. Therefore, if the recompense for labor does not enable the physician to carry overhead expenses; does not give him time and funds for improvement, study, travel and necessary recreation; does not produce profit that is protection for his family and for himself in sickness and old age; he can neither give efficient scientific service nor continue to progress. If adequately recompensed, he can give scientific service far more readily and is more likely to progress.

Yet in the face of these obvious evolutionary politico-economic movements and the basic psychological facts that govern intelligent human action, medical education is still demanding for every individual admitted to the study of any branch of the science and art of medicine a high standard of preparatory education, in substance, a B.A. degree from a recognized educational institution.

This standard, combined with the principles of education that are employed in every medical college after admission to study, is such that it can be justly claimed that the educational methods pursued tend to make the graduate physician in this work-a-day world pursue the practice of medicine as a pure science, that can isolate itself, that needs no association with the applied sciences, especially economics. For instance, medical education during all these years has apparently never conceived of the practical necessity of recognizing the psychological fact No. 1 as a pre-educational factor of utmost importance.

The United States Government, on the other hand, by the present war has been unceremoniously forced into recognizing its educational value—as evidenced by the first standard of admission to the aviation service, where the highest possible human skill is required in order successfully to destroy life. In

this initial examination the most accurate possible physical and mental tests are employed in order to ascertain not only the inherent character and personality of the candidate, but more especially the acuteness, stability, and durability of *every one* of his senses.

In the profession of medicine, however, where there is a demand, if it were possible, for even greater character and personality, acuteness, stability, and durability of the senses—the object of the physician being to preserve life—no recognition is given to the fact that efficiency in applying abstract knowledge depends upon the efficiency, not of one, but all of the special senses.

The student of medicine may be deficient in one or more of his special senses, have little tactile sensibility, a poor sense of smell or hearing, defective eyesight, little character and no personality adaptable to a physician. Yet no tests are made to ascertain or correct these defects, and the student is graduated and permitted without any organized supervision to try to preserve—where he would not on the same grounds be permitted to destroy—life.

As to the educational value of the psychological fact No. 2, there can be no question that the mechanical aids to scientific medicine (which include all laboratory methods, even history filing and compilation may be added) have become so numerous, have so developed in detail, that to attain efficiency requires not general but definite technical knowledge.

There can be no question that medicine will become organized in the future, and when so organized it will be no exception to the general rule and must attain efficiency by having subdivision of labor—therefore, organization of labor and equipment.

Medical education, as conducted today, may be ethical, but it is still decidedly theoretical. Medical schools virtually only graduate officers, and then only colonels. No provision is made for officers of lesser rank, for the privates in the form of technicians. For privates we, as a profession, must take the unsuccessful physician, volunteer nurse, half-trained office girls, or any kind of unskilled help available, whom each physician must train for himself after his own sweet will in order to fill the ranks of scientific medicine with privates. Yet economic organization is staring the profession in the face. With this army thus organized we guarantee to defend the public from disease—then wonder why our efforts as a profession are not appreciated!

Even the colonel, who may later wish and be willing to work for a higher rank—for instance, to become a specialist—there is no institution provided where, through concentration of skilled leaders, equipment, technical assistance, and economic organization, he can learn his specialty from A to Z, and be instructed and equipped with a modified plan of economic organization, whereby he can do justice to the public and his profession by maintaining and delivering the high standard of goods which he advertises to sell in competition with the inferior grades of the cults by attaching to his name an "M.D."

As a profession, in most of our medical colleges, we unquestionably try to manufacture a high standard of goods, which goods must be sold in the open market to the public. We advertise to the public that the sign "M.D." signifies the highest standard. Yet as a profession have we adopted any means whereby we can demonstrate to the buyers, the laity, the value of standard "A" as compared with the imitation "B," and in so doing increase the demand for standard "A" goods, to the benefit of both producer and consumer? I think not.

The public through universal education, is being taught to think, to reason, yet the medical profession today, like the cults, is asking the public to accept goods on faith without investigation; and we claim as a standard science based on reason, not wholly on faith.

If the profession of medicine will not undertake

to solve these politico-economic problems for itself, it is true that evolutionary forces will solve them for us, but with brute force and a corresponding indiscriminate destruction—unless man employs the intelligence that nature has given him to anticipate evolutionary movements, through the use of intelligence scientifically applied but governed by the higher human emotions.

It is not within the limits of this letter even to outline the means to the end that experience suggests. But the old adage always proves true that where there's a will there's a way.

The object of this letter is to arouse, with your assistance, sufficient sentiment to instigate a systematic, organized movement to attain the end sought—the practical application of ethical economics; so that humanity may be efficiently served by the profession of medicine, and the profession win universal respect and attain efficiency through following out not only ethically but economically, the dictates of the noblest of all the sciences. It is intended to prove that such a movement is feasible, for if an imperfect, experimental organization, based on a belief in principles, carried on by an individual, can apply these principles of ethical economics successfully, certainly, with the intelligence of the profession concentrated towards that end, there can be no question of the outcome of the many economic problems confronting the science of medicine.

Criticism is invited, and the writer would appreciate notice or information of any criticism or suggestion, direct or indirect, that may be offered.

Respectfully submitted,

G. S. PETERKIN, M.D.

RECENT DEATHS.

DR. MYRON LEVI CHAMBERLAIN died at his home in Boston, Feb. 13, 1919, aged 74. He was a graduate of the Bellevue Hospital Medical College in 1867, practised in Southbridge until 1874, and in Boston after that. He was a member of the Massachusetts Medical Society and of the American Medical Association. He is survived by his widow, who was Miss Cynthia P. Wales.

DR. CARLOS BARAJAS, a prominent physician in Mexico City, and professor of anatomy in the University, died recently.

DR. R. S. GOMEZ died a short time ago. He was professor of internal pathology and descriptive anatomy at the University of Buenos Aires.

DR. JOHN ALLAN MACCORMICK died recently at the St. Elizabeth Hospital, in Brighton, Mass., at the age of 45 years. He was a graduate of the Harvard Medical School, St. Francis Xavier College, Nova Scotia; Sloane Hospital, New York, and Carney Hospital, South Boston, and was visiting physician for the St. Elizabeth Hospital. He was a member of the Massachusetts Medical Society and the Intercolonial Club, and was physician for Clan Ramsey, Order of Scottish Clans.

DR. AARON S. OBERLY died recently at his home in Avon, Conn., at the age of 81 years. Dr. Oberly served as a Naval surgeon in the Civil War, and was chief surgeon with the Adriatic squadron of the United States Navy in 1886.

CAPTAIN HOWARD E. AMES, medical director, U.S.N., died on December 27, 1918. Dr. Ames had been an officer in the Navy since 1875, and had been on the retired list since 1912. He served as medical officer on board the *Bear*, which rescued General Greely and his party in the Arctic regions. He was a member of the Biological Society.

DR. T. BAYMA died of influenza in Brazil recently. He was a distinguished physician and bacteriologist of S. Paulo, and director of the bacteriologic and the vaccine institutes in that city. Dr. Bayma was 55 years of age.

NOTICE.

INCOME TAX DUE. RETURNS MUST BE FILLED ON OR BEFORE MARCH 15. BILL PROVIDES HEAVY PENALTIES.

Work on the collection of \$6,000,000 has been begun by the Bureau of Internal Revenue. This is the estimated yield of the new revenue bill. The income tax provisions of the act reach the pocket-book of every single person in the United States whose net income for 1918 was \$1,000, or more, and of every married person whose net income was \$2,000 or more. Persons whose net income equalled or exceeded these amounts, according to their marital status, must file a return of income with the collector of internal revenue for the district in which they live on or before March 15.

For failure to file a return on time, a fine of not more than \$1,000, and an additional assessment of 25% of the amount of tax due. For "willfully refusing" to make a return on time, a fine not exceeding \$10,000, or not exceeding one year's imprisonment, or both. For making a false or fraudulent return, a fine of not more than \$10,000, or imprisonment for not more than one year, or both, together with an additional assessment of 50% of the amount of tax evaded. For failure to pay the tax on time, a fine of not more than \$1,000 and an additional assessment of 5% of the amount of tax unpaid, plus 1% interest for each full month during which it remains unpaid.

In addition to the \$1000 and \$2,000 personal exemptions, taxpayers are allowed an exemption of \$200 for each person dependent upon them for chief support if such person is under eighteen years of age and incapable of self-support. Under the 1917, act, this exemption was allowed only for each dependent "child." The head of a family—one who supports one or more persons closely connected with him by blood relationship, relationship by marriage, or by adoption—is entitled to all exemptions allowed a married person.

The normal rate of tax under the new act is 6% of the first \$4,000 of net income above the exemptions, and 12 per cent of the net income in excess of \$4,000. Incomes in excess of \$5,000 are subject also to a surtax ranging from 1% of the amount of the net income between \$5,000 and \$6,000 to 6% of the net income above \$10,000.

Payment of the tax may be made in full at the time of filing return or in four installments, on or before March 15, on or before June 15, on or before September 15, and on or before December 15.

Revenue officers will visit every county in the United States to aid taxpayers in making out their returns. The date of their arrival and the location of their offices may be ascertained by inquiring at offices of collectors of internal revenue, postoffices and banks. Failure to see these officers, however, does not relieve the taxpayer of his obligation to file his return and pay his tax within the time specified by law. In this case taxpayers must seek the Government, not the Government the taxpayer.

SOCIETY NOTICE.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.—Meeting for Medical Improvement, United States Hotel, Boston, Thursday, March 6, 1919, at 11.30 A.M.

Reader, Halsey B. Loder, M.D.

Subject, "Fine Points in Surgical Diagnosis," for Dr. J. C. Fraser, Weymouth.

C. A. SULLIVAN, M.D., Secretary.

The Boston Medical and Surgical Journal

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Original Articles.

PNEUMONIA AND EMPYEMA.

BY 1ST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

1. *Sources of Data:* Clinical Records (Form 55), Autopsy Records, Medical History of the Post, and data collected by Major P. G. Woolley in several recent reports to the S.G.O.

2. *Period Considered:* From Sept. 27, 1917, through May 31, 1918, i.e., 35 weeks.

3. *Cases Considered:* 485 admissions, including (a) two of empyema in which no pneumonia was recorded; and (b) ten of pneumonia (6 lobar and 4 bronchial, with no deaths) associated with signs of chronic tuberculousis; but excluding (c) cases frankly diagnosed "tuberculosis" with only a later diagnosis of pneumonia; only one of these showed tubercle bacilli in the sputum. The sputum of all pneumonias has been examined for tubercle bacilli routinely, and in suspicious cases repeatedly (i.e., daily for 3 days; and often later again for 3 days). In this connection the following recent authoritative statement with reference to a reported case of pulmonary consolidation is pertinent: "If the sputum had not been examined for

tubercle bacilli, the diagnosis of acute lobar pneumonia with beginning resolution of a consolidation. . . and recovery by lysis would have been made. . . Tuberculous pneumonia is tuberculous from the start and not secondary to a pneumonia caused by some organism." (Longcope, W. T., "Medical Clinics of North America," November, 1917, I, 469); (d) one case of cerebro-spinal meningitis with secondary pneumonia; (e) one case of diphtheritic throat paralysis with terminal bronchopneumonia; (f) one traumatic punctured wound of the thorax with terminal pneumonia.

4. *Incidence and Mortality:* The usual proportion of the camp population to be sick with pneumonia has been 1.4% (or as technically expressed in the army: "annual pneumonia morbidity rate per 1000 = 14.3). As the parallel non-effective rate from all causes has been 31.5 p.m. it would appear that 14-31 or 45% of the sick days during this time has been due to pneumonia.

The pneumonia mortality has been only 13% of 485 cases. This rate, roughly only 1/2 that of civil statistics (20-27%, Norris in Osler-McCrae, I, p. 270.) is due to: (a) the present day apparent increase in the incidence of pneumonia as of other diseases. In pneumonia, this is owing to more accurate diagnosis (credit largely to the x-ray department) and to more

careful reporting of those diagnoses as made; (b) in type I cases the earlier administration of serum; (c) in all cases, the tendency to earlier admission to hospital of suspicious cases for observation, with the resulting prevention of the damage done by overwork and exposure to early ambulant cases (such as reg. No. 8920, who complained of pain in the side for 3 days before being sent to the hospital, and who later died here).

The frequency of empyema in pneumonia has been 16%.

The mortality in 77 cases of empyema has been 44%; but the mortality of cases that were operated on was only 21% vs. 74% for the non-operated, so that we feel that the total death rate may be lowered in future. This will be referred to again further on in Par. 39, on the Value of Operation.

TABLE I.

PERIOD OF 35 WEEKS FROM SEPT. 27, 1917, TO MAY 31, 1918, INCLUSIVE.

Average strength of command	29,613
Cases of pneumonia	485
Annual pneumonia morbidity rate per 1000	14.3
Annual non-effective rate all causes per 1000	31.5
Pneumonia morbidity, per cent. of total non-effectives	45
Deaths from pneumonia	64
Annual pneumonia mortality rate per 1000	3.2
Pneumonia case-mortality, per cent.	13
Cases of empyema	77
Deaths from empyema	34
Empyema case mortality, per cent.	44

5. *Rank*: Enlisted men had a pneumonia morbidity rate nearly 4 times that for commissioned officers, as might be anticipated. Furthermore, mortality and empyema happened to occur only in the former group. The greater immunity of officers is probably due (a) to seasoning in service at Officers' Training Schools, (b) in a lesser degree to better physique. (c) possibly to less prolonged exposure to wet and possibly greater facility in getting dry clothes afterward, and (d) possibly to less crowded quarters.

In answer to any who may feel that such health conditions are unjust to the enlisted men, attention is drawn to the reverse military conditions: "Statistics show that in battle the percentage of casualties is much higher among the officers than among those in the ranks." (Andrews, Capt. L. C., U. S. Army, "Fundamentals of Military Service," Phila. 1917, p. 91).

Of the 8 officers half were medical men (inci-

dentally all serving in this Base Hospital), half were line men. All recovered. Considering the average number of medical officers on duty in the hospital and the line officers in camp, the former showed about *twenty* times as much pneumonia. It is worthy of note, however, that no medical officer, nurse, or orderly serving on a pneumonia ward developed pneumonia.

TABLE II, RANK.

PERIOD 35 WEEKS FROM SEPT. 27, 1917, TO MAY 31, 1918, INCLUSIVE.

Average strength of command	29,613
Commissioned officers	1,778
Enlisted men	27,835
No. cases pneumonia among { Officers	8
Enlisted men	477
Annual pneumonia morbidity { Officers	6.7
per 1000 { Enlisted men	25.5
Pneumonia morbidity rate among men is 3.8 times that among officers.	

6. *Organization*. The part played by the organization in pneumonia incidence has been discussed in a recent epidemiological report by Major Woolley. The mortality is highest among cases from the Field Artillery: 16%, then 14% each for the Infantry and for the Depot Brigade, 13% each for the Machine Gun Battalions and Engineers, 10% for miscellaneous, and 0 for the Ambulance Companies, Field Hospital, and Base Hospital.

7. *Racial Incidence*. Incidence of pneumonia: The negroes contributed 30% of the entire 485 cases; but when we recollect that the first negro was admitted March 31st, we find that they contributed 61% of the 245 cases from that admission through the end of this series on May 31. When one further considers the relative black and white population in this cantonment, the greater incidence of pneumonia is appalling. This feature has been reported in detail by Major Woolley, but it may be briefly summarized as follows: During the two months of April and May, during which occurred the negro influx, the annual morbidity rate per 1000 was 3501 vs. W. 13, or more popularly expressed the negroes had 39 times as much pneumonia (estimated, of course, as if there were an equal number of each in camp) as the white men. Major Woolley has calculated that if the morbidity rate for the negroes had existed among the white men of the camp, there would have been nearly 3000 cases of pneumonia among them. The causes were probably two: exposure incident to change of climate. and overcrowding,

especially damaging to men used to the roomier life of the country.

The mortality from pneumonia, however, was only slightly higher among the black men, 16% *vs.* 12% for the whites.

The kind of pneumonia was lobar in 94% of the black cases, but in the whites only 74%. The mortality was practically the same (15-18%) in the negro lobars, negro bronchos, and white bronchos, while the white lobars showed (9%) only half the rate. It seems as if the blacks collapsed with any pneumonia, while the whites had a fair show unless they got the streptococcus.

The incidence of empyema among the negroes was about one-third that of the whites in lobar pneumonia, and about one-half in bronchopneumonia. Apparently the negroes died too early in the disease to develop empyema.

The mortality, however, among negroes having empyema was vastly higher, 89% *vs.* 38%, again a seeming lack of resistance.

TABLE III. NEGROES AND WHITE.

		PNEUMONIA			EMPYEMA			
		No. cases	No. pneum. dead	Per cent. pneum. dead	No. cases	Per cent. pneum. dead	No. emp. dead	Per cent. emp. dead
White	Lobar	246	23	9	52	21	13	25
	Broncho	89	16	18	14	16	11	79
	Empyema*	2	2	100	2	100	2	100
		337	41	12	68	20	26	38
Black	Lobar	137	21	15	8	6	7	87
	Broncho	11	2	18	1	9	1	100
		148	23	16	9	6	8	89
TOTAL		485	64	13	77	16	34	44

* Without pneumonia.

8. *Length of Service.* Seasoning has decreased the incidence of pneumonia here as in previous statistics on South Africa and elsewhere (Lord, F. T., "Diseases of the Lungs," Phila. & N. Y., 1915, p. 157). Of this series, 50% had been in service 1 month or less, while only one other monthly period showed as high as 10%, namely, patients in service for about six months.

The mortality on the other hand, to our surprise, was lower in the unseasoned men. The smallest case mortality was among pneumonias who had been in service for 2 months, 10%; next in those of 1 month's service, 14%; while the death rate in other months varied from 19-22%. It really seems as if this must be a case of "how statistics can lie!"

TABLE IV. SERVICE.

		CASES OF PNEUMONIA. DEAD IN EACH PERIOD.			
LENGTH OF SERVICE. (NEAREST UNIT OF TIME)			Case		
	No.	Per cent.	No.	mortality Per cent.	
1 week	59	12	13	20	
2 weeks	50	10	9	14	
3 weeks	18	4	3	5	
1 month	115	24	10	16	
2 months . . .	38	8	4	10	
3 months . . .	32	7	7	22	
4 months . . .	38	8	8	21	
5 months . . .	42	9	4	21	
6 months . . .	47	10	3	21	
Over 6 months	36	7	3	19	
Unknown . . .	5	0	0	0	
Civilians . . .	5	0	0	0	
Total	485		64		

9. *Alcohol* cannot be said, from the figures available here, to increase the frequency of the mortality of pneumonia. Furthermore, the figures available are hardly reliable owing to the well known fear among the men that admission of the use of liquor may result in penalty. If we might judge by the following analysis of pneumonia histories, referring to habits prior to army life, temperance is spreading among young men of the 3rd decade more rapidly than has been generally believed: "considerable," 2%; "moderate," 25%; "very moderate or occasionally," 8%; "rare or none," 65%.

10. *Gas*, lachrymatory, seems to have played as negligible a part in the causation of pneumonia here as has been reported abroad with reference to T.B. Of 164 cases on which data were secured, 62% had not had gas at all, and only 23% had had it within a month of onset of the pneumonia. More figures are desirable.

11. *Previous Attacks of Pneumonia* did not, in this series, increase either the death rate, or the frequency of empyema. One or more previous attacks were here noted in only 12% of the 485 cases, and of this group 14% died, not materially higher than the general mortality rate of 13%. Of this group again only 12% developed empyema, not a greater proportion than the general empyema frequency in the whole series, 16%. Of these empyemas only 33% died, as it happens, lower than the general empyema death rate of 44%. The 4 patients with two or more previous attacks, furthermore, ran mild courses: (a) register No. 12677, claimed to have had three previous attacks of pneumonia, but his attack here was limited to the right middle lobe, and he had his crisis on the 4th day after onset. Incidentally the onset was abrupt with pleurisy pain and hemoptysis; (b) Three patients, regis-

ter Nos. 13239, 14173, and 14401, had each *two* attacks prior to the one which brought him into this hospital, and all 3 are doing well.

In only one of the fatal pneumonias did the previous attacks seem to play a definite part. Abstract of this case follows: Hospital Register No. 9353, a Sergeant in the Q.M.C., white, had his first attack of lobar pneumonia (side unknown) on August 26, when he was sent from the camp to the Burbank Hospital in Fitchburg. Later, after this Base Hospital was opened, he was transferred here, on Sept. 26. The record of this admission was lost during a fire in the Receiving Ward. After ten days he was sent out of hospital on furlough, and in another ten days back to duty. He remained well till his second attack of lobar pneumonia (left lower), Nov. 18 to Dec. 15; to duty, well. His third attack began with chest pain on March 10th; on March 12th he was admitted, with lobar pneumonia, type III, and died March 23rd. Both upper and both lower lobes were solid at necropsy.

12. *Classification of Pneumonia.* "It is customary to speak of lobar and bronchopneumonia. This distinction is useful from the standpoint of the pathologist, but how useful it is from an etiologic or epidemiologic viewpoint remains to be seen. Both forms may be primary and both may follow measles. It is generally believed that lobar pneumonia is more frequently primary, while bronchopneumonia is the far more likely to follow measles. However, up to the present there are no convincing statistics on this point." (Vaughan, V. C., *Journ. Lab. & Clin. Med.*, Jan., 1918, III, 253). *Pathologically* speaking, the three main kinds of pneumonia seen in this hospital have been lobar, broncho, and empyema without prior pneumonic consolidation. Lobar was nearly four times as frequent as broncho. Measles-pneumonias were by no means always bronchopneumonias, but were 24% lobars; of these 10 cases clinically lobar, three were proven at autopsy to be lobar, not confluent-lobular. Of all the lobar pneumonias 16% got empyema, as did practically the same, 15%, of the bronchopneumonias.

Compare with this high frequency of empyema the lower percentage of civil life: Norris gives 5% empyemas in lobar pneumonias. No similar figures have been accessible here as to the usual fraction of bronchopneumonia to get empyema, but apparently it is small, for out of

140 cases of empyema Lord found only four after broncho *vs.* 136 after lobar. The lobar-pneumonia-empyemas here had, however, less than half the death rate of broncho-pneumonia-empyemas.

Etiologically speaking, the three main kinds of pneumonia here have been primary, post-measles, and post-ether. Primary have made up 88% of the 485 cases, while only 8% have been consequent on measles. The measles-pneumonias have developed empyemas more than twice as often as have the primary pneumonias.

From the viewpoint of *mortality*, the highest among the pneumonias was post-measles, 32%, primary only 12% died, and post-ether one died, or 6%. Among the empyemas the measles-pneumonia-empyemas, furthermore, had more than twice the death rate of the primary-pneumonia-empyemas.

The many possible *etiological* subdivisions have, in this report, been consolidated into three classes: primary=88%, post-measles=8%, post-ether=4%, total, 100%.

While it is clear that pneumonia here has been essentially a primary disease, mention must be made of the inclusion under that heading of some cases which by more refined interpretations might be called secondary, rather than *associated* as we prefer to regard them: (a) *acute minor upper respiratory infections* (Rhinitis, pharyngitis, tonsillitis, laryngitis, even sinusitis) were disregarded, because: (1) Accurate data as to their presence had not been consistently recorded; nor, indeed, is it likely that satisfactory histories could be obtained here. (2) Further even where present, these complaints cannot be considered primary causes of pneumonia, for they have been extraordinarily frequent in healthy men. The tuberculosis examining boards have found high percentages of the examinees with these symptoms but with scant signs. How then can these histories be relied on? (3) "Laryngitis and bronchitis may precede or complicate lobar pneumonia. Bronchitis is practically always present, and it is often difficult to say at what point a bronchitis should be considered a complication or merely a part of the disease, it being largely a question of degree and of distribution." (Norris, G. W., in Osler and McCrae's "Modern Medicine," Phila., 1913, I, 248). Another authoritative statement to the same effect is: "The infection as well as the lesions is probably a descending one, and no sharp line can be drawn either in time or symptoms be-

tween the occurrence of the pharyngitis, laryngitis, bronchitis, and finally the bronchiolitis and bronchopneumonia." (Cole, R., Pneumonia at a Base Hospital, Jour. A.M.A., Apr. 20, 1918, 70, p. 1146.)

b. *Rheumatic Fever*: Two cases developed pneumonia (one lobar, one broncho) the first day of the rheumatic fever; one (lobar) on the fifth; one (lobar) on the seventh; one (broncho) on the sixteenth, and one (lobar) on the forty-second day. These six were considered associated rather than causal, because:

1. Conversely two men with pneumonia (lobar) developed rheumatic fever, on the seventh and fifty-first days. The pneumonia was presumably not the cause of the rheumatic fever.

2. The frequency of rheumatic fever and pneumonia and the rarity of their association: eight times in four hundred and eighty-five pneumonias, i.e., less than 2%.

c. *Scarlet Fever*: One case was considered coincident, inasmuch as its onset was accompanied by "pain in the chest" and "bronchitis"; and the patch of consolidation was found only on the seventh day of the disease; yet we know of simple pneumonias whose consolidation was diagnosed equally late or not at all.

d. *Parotitis*: One case was considered a coincidence rather than a cause, since it developed on the first day of the pneumonia. In the mumps ward a patient developed pneumonia

(lobar); this also was considered independent, in view of being the only one among mumps cases.

e. *Rubella*: One case developed on the fourth day of a pneumonia; this was considered a coincidence.

The etiology of 88% of the 77 empyemas was a primary pneumonia vs. a measles-pneumonia in 8%. When we recollect that primary pneumonias were in this series ten times as common as measles-pneumonias, we realize that we should, therefore, consider rather the converse of the first sentence of this paragraph, namely, the fraction of the primary pneumonias to develop empyema, compared with the fraction of the measles-pneumonias to do so. This was only 15% vs. 34%, hence the bad prognosis for measles-pneumonia.

TABLE V. THREE KINDS OF PNEUMONIA.

Of 485 PNEUMONIAS		Of Each Class That Got EMPYEMA	Of The EMPY. FROM EACH CLASS THIS PER CENT. DIED
Of 485 pneumonias			
Primary* made up	88%.....	15	37
Measles* made up	8%.....	34	79
Post-operative* made up	4%.....		
Lobar	79.0%	16	37
Bronchial	21.0%	15	80
Empyema without pneumonia	00.4%		

* Lobar or bronchial.

TABLE VI. THREE KINDS OF PNEUMONIA.

PNEUMONIA														EMPYEMA									
No. of Cases														No. of Cases									
In each group														In each group									
Per cent. cases in each group														Per cent. emp. in each group									
Per cent. mortality per cent.														Per cent. prev. to get emp.									
No. dead														No. dead									
Case mortality per cent.														Case mortality per cent.									
In 1st 100 pneumonia														In 1st 100 pneumonia									
In 2nd 100 pneumonia														In 2nd 100 pneumonia									
In 3rd 100 pneumonia														In 3rd 100 pneumonia									
In 4th 100 pneumonia														In 4th 100 pneumonia									
In 401-485 pneumonia														In 401-485 pneumonia									
Total														Total									
Per cent. emp. in each group														Per cent. emp. in each group									
Per cent. prev. to get emp.														Per cent. prev. to get emp.									
No. dead														No. dead									
Case mortality per cent.														Case mortality per cent.									
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(To be continued.)

THE VENEREAL INFIRMARY AT CAMP HUMPHREYS, VIRGINIA.*

BY GEORGE G. SMITH, CAPTAIN, M. C., BOSTON.

NOVEMBER 26, 1918, the two venereal infirmaries which had been in operation at Camp Humphreys were consolidated. The building assigned to the new infirmary was situated at Belvoir, in close proximity to the Development Battalions which it was intended to serve. This building was of the old barrack type, 180 feet long by 21 feet wide. It was piped for sewer and cold water connections at one point.

As it was understood that the building was to be used for temporary purposes only, no more labor or materials were expended upon alterations than was absolutely necessary. The partitions dividing the structure into rooms were moved to give the arrangement shown in the accompanying diagram. At the easterly end of the building was an office in which the paper work was done; next to that was a room for the administration of salvarsan. The center room was arranged for a waiting room; it opened into the treatment room, which was 60 feet long. Beyond the treatment room were two small rooms, one of which was a laboratory, the other a smaller waiting room for outgoing cases. Each room was heated by a stove. Water was heated over an old stove resurrected from the scrap heap. Small oil stoves were used to heat the sterilizer.

The treatment room, 60 by 21 feet, was divided lengthwise by a railing. Along the left-hand wall were shelves for urine glasses (bottles which once held "Pin Money" pickles), and 12 feet of ordinary latrine troughs supplied with two faucets. Along the railing were placed 6 galvanized iron cans about 26 inches in height. Above the cans and above the troughs were Valentine irrigators $2\frac{1}{2}$ feet apart. There were 17 in all.

That part of the room to the right of the railing contained three tables, one for dressings and two for sound cases, and two stoves. There were several small tables for records, instruments, and solutions, and a home-made cabinet for supplies.

The personnel consisted of 5 medical officers. Of these, one was in charge of the records, the attendance, and the administration of the clinic. Two examined patients and two others passed sounds, gave prostatic massage and did dressings. A sergeant was quickly trained to stain

smears and to examine them for pus and for gonococci. In doubtful cases his work was checked up by one of the medical officers. Another sergeant had charge of the supplies and of the enlisted personnel. There were two clerks, one for the office and one to check the attendance and give out records. Six enlisted men and a corporal were employed in the treatment room where they helped with dressings, attended to the irrigators, and made themselves generally useful. Most of these men were colored; they were obedient, quick to learn, and faithful. No trouble whatever was experienced from the mingling of the two races.

The patients treated at the infirmary were both white and colored. The great majority were from the Development Battalions, to which they had been transferred because of chronic venereal disease. Cases of urethritis in the Development Battalions were divided among 5 companies, 3 colored and 2 white. At one time there were about 500 under treatment. They reported every day except Sundays and holidays. Each company reported at a different hour under the supervision of a commissioned or non-commissioned officer. This man was held responsible for the attendance of his men. He had a list of the venereals in his company and every day checked it up with the roster maintained by the Infirmary. Upon the latter the daily attendance of every man was checked. Careful supervision of the attendance was made necessary by the careless attitude of some of the patients, who took every opportunity to escape treatment. This attitude changed, however, when it became known that a man had to be discharged from the Infirmary before he could get out of the army.

Daily reports were sent to the Personnel Officer and the Battalion Surgeons containing the names of patients discharged or admitted by the Infirmary.

The men entered the building by a door opening into the waiting room. They filed past a table and were given their record cards. At the same time the attendance was checked off. They passed into the treatment room, where a medical officer received the record and made what examination was necessary. Each patient urinated into two glasses, which he presented for inspection. The medical officer then indicated his treatment.

In all acute cases of venereal disease a Social Record was made. This questionnaire, which

* Published by permission of the Surgeon-General of the Army.

was sent from the Surgeon General's office to all camps, read as follows:

SOCIAL CASE HISTORY SHEET.

Date _____
 Diagnosis { Laboratory _____ M., S., or W.
 { Clinical _____ Age _____
 Patient's name _____ Rank _____ Reg. No _____ Unit _____
 Date of admission _____
 Date of exposure to infection and of first symptoms. _____
 Source of infection (Woman's name and address if possible). _____
 Would patient be willing to identify her? _____
 Was she paid? (In any way, monetary or otherwise. State particulars.) _____
 Ascertain all facts in reference to woman believed to be the source of infection. The following facts should be included.
 Age _____
 Social condition. _____
 Occupation _____
 Wage _____
 Single, married, widowed, divorced. _____
 Had either the patient or the woman believed to be the source of infection indulged in alcohol at the time of infection? _____
 Did infection take place in a house of prostitution? (Give full particulars of all circumstances in connection therewith.) _____
 What venereal prophylaxis was used and by whom was it administered? _____
 How long after exposure was venereal prophylaxis used? _____
 Do you know of other cases infected from the same source? _____

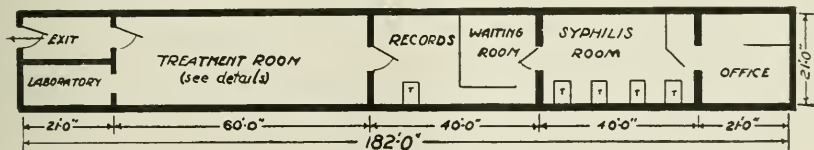
The Social Case Histories were sent to the Camp Surgeon, who informed the local Boards of Health of the presence in their territories of sources of infection, and instructed the patient's

commanding officer whether the man was subject to Court Martial for failing to take venereal prophylaxis. If the patient stated that he had taken prophylaxis, the truth of his statement could be verified by the records of the infirmary in which he claimed to have taken it. Beginning November first, 1918, all cases in Camp Humphreys who contracted venereal disease were liable to court martial, whether they had taken prophylaxis or not.

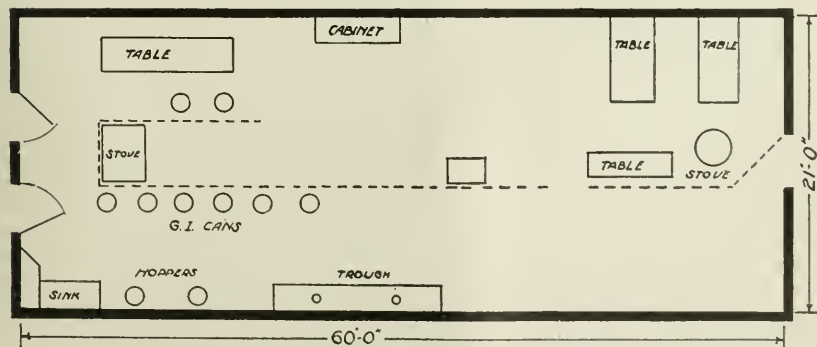
Statistics show that of 274 cases of venereal disease among white troops in the First Development Battalion, 84% were infected before entering the army. This fact is supported by the records of cases discharged from the Venereal Infirmary at Camp Humphreys during December, 1918. Approximately 80% of these were chronic. In the table which follows, the cases marked "observation" are those who were sent to the Infirmary with so few signs of disease that a definite diagnosis could not be made. Undoubtedly some of them had a slight urethritis, but they could be considered with the chronic cases rather than with the acute.

Cases discharged from the Venereal Infirmary during December, 1918:

Gonorrhea, chronic	327
Gonorrhea, acute	17
Syphilis (mostly chronic)	49



PLAN OF VENEREAL INFIRMARY



DETAILS OF TREATMENT ROOM

Chancroid	13
Observation	65
Phimosis	3
Circumcision wound	2
Stricture urethrae	4
Condylomata acuminata	4
Herpes progentialis	2
Incontinence, urinary	1
Balanitis	3

Total number of cases 490

The requirements for discharge in the case of patients with urethritis were: Absence of urethral discharge upon stripping the urethra, clear urine for at least one week, prostatic secretion in which there was an average of not more than two pus cells per field (oil immersion). A few cases with persistent mucoid discharge were declared free from venereal disease after at least 3 microscopic examinations of the prostatic and vesicular secretion showed (1) no gonococci, (2) no more than 2 pus cells per field.

Cases of syphilis were declared "available for transfer" after they had been given 6 intravenous injections of arsphenamin, usually 0.3 gram at a time, and mercury either by inunction or by intramuscular injection.

Urethritis was treated mainly by lavage of urethra and bladder with potassium permanganate about 1-8000 in strength. Valentine irrigators equipped with metal nozzles were used; the nozzles were boiled after each irrigation. In the more acute cases, anterior urethral injections of one of the silver albuminates were given by one of the attendants. Sounds and prostatic massage were employed, but to rather less extent than is customary in other clinics with which the writer has been connected. The amount of involvement of prostate and vesicles seemed less than is met with in such clinics as that of the Massachusetts General Hospital. The incidence of epididymitis was certainly less. Only 6 cases developed during the 6 weeks in which the Infirmary was operated at Belvoir. This may have been due in part to the fact that many cases were of long duration and that the gonococcus, if present at all, was in an attenuated condition. It may have been due also to good general condition of the men incident to their regular, outdoor life. To offset this factor, however, there was the hard physical labor of drill and of working on details. All our cases, with occasional exceptions, were kept on full duty during the course of their treatment.

In the treatment of syphilis, a diagnosis had to be made before any medication was started. Open lesions were sent to the Laboratory of the

Base Hospital for Dark Stage examination, as there was no electricity at the Infirmary during the day. If spirochaetae were found or if the blood showed a double plus Wassermann, treatment was begun at once.

The urine of each man was examined for albumin before each injection of arsphenamin. One case was found who developed albuminuria after one treatment. As he continued to have a large trace of albumin for a week, he was sent to the Base Hospital for further treatment.

Injections of arsphenamin were given in the late morning or in the early afternoon. The men were then sent to quarters and the next morning were put on full duty. Some 300 injections in all were given. Aside from the case of albuminuria mentioned above, there were no untoward results. With one medical officer mixing the solution and two others administering it by the gravity method, a considerable number of treatments could be given in an afternoon. 36 was the greatest number given on any one day, but more could have been handled with ease.

The chief interest in this study resides in the fact that really quite efficient treatment can be given with a comparatively crude equipment. With plenty of floor space and sufficient irrigators, a surprisingly large number of men can be treated. It was estimated that 200 patients per hour could have been cared for in the Infirmary at Camp Humphreys, had there been need.

The writer wishes to express his indebtedness to Captain Meylackson, whose Venereal Infirmary at Camp Meade furnished many suggestions of value, to Lt.-Col. I. W. Brewer, Camp Surgeon, and to Major Stephan Szumanski, Commanding Officer of the Development Battalions, for their coöperation, and to all the men, officers and privates, who worked for the welfare of the Infirmary.

THE NORMAL ARTERIAL TENSION.*

By CLAES JULIUS ENEBUSKE, M.D., CAMBRIDGE, MASS.

[Abstract of a paper entitled "Inquiry through Analysis of Measurements of the Maximum Tension of the Radialis Artery."]

WHAT is the normal arterial tension, and what constitutes an abnormal arterial tension? One hundred years ago the normal temperature of the body was unknown; but more than two thousand years ago the ancient physicians recognized increased body heat as the sign of acute

* Paper read before the Boston Society of Psychiatry and Neurology, Jan. 17, 1919.

disease. Two hundred years ago the normal frequency of the pulse was only beginning to be recognized; but more than two thousand years ago the ancient physicians recognized the quick and the slow pulse.

The quality of the pulse, which now we call tension, was observed by the ancient physicians of the Far East, by the Chinese physicians who, more than 4,500 years ago, adopted the practice of feeling the pulse. But today, even after it has gone through the minds of generations of physicians for more than forty-five centuries, the ancient notion of pulsation has not been developed with sufficient clearness for literature to tell unanimously what constitutes the normal arterial tension.

Not many years ago, physiology, basing its teaching upon the mean of the bloodpressure in the larger mammals, taught us what the arterial tension should be; but of late physiologists have abandoned this deductive method and base their present teaching upon the results of clinical observations. Thus the determination of the normal arterial tension has left the domain of physiology as such and is today a purely clinical question.

The clinical answers to this question are varied at the present time; and values ranging from 91 m.m. to 160 m.m. are mentioned as within normal bounds. Thus the recognition of the normal arterial tension today is in the same state as was the recognition of the normal body temperature some eighty years ago, when any temperature between 94° and 104° Fahr. might have been considered normal body heat.

The great difference between the zero-values mentioned as normal arterial tension is caused by many factors, principally the different widths of the pneumatic cuffs used for the purpose of compressing the upper arm and obliterating the brachialis artery. If the cuff is broader a lower zero-value is obtained; if the cuff is narrower the zero-value is found to be higher, within certain limits. No zero-value has as yet been proven conclusively to be identical with the true expression of the normal arterial tension; but 110-120 m.m. Hg. appears to be the zero-value which has found most favor among writers.

My purpose is to prove that the maximum tension of the radial artery at a level higher than 140 m.m. but not exceeding 150 m.m. Hg. is the normal arterial tension. The arterial tension is a very important object of observation at every medical examination, for it stands in

intimate relation to various grades of natural immunity. To justify these propositions, I desire to present for consideration a summarized account of results obtained by my analysis of measurements (measured with the radial artery-tensiometer) of the maximum tension of the radial artery in various diseases.

1. Analysis of 953 measurements in 28 cases of cyclothymia shows that at a spontaneously stable maximum tension of the radial artery at a level of more than 140 m.m., not exceeding 150 m.m., there does not exist any cyclothymia, either in the manic or in the depressive state. The uniformity of the findings in several cases supports this deduction and adds increased strength to its validity.

2. Analysis of 5046 measurements of the maximum tension of the radial artery in 130 cases of schizophrenia proves that at a spontaneously stable arterial tension of the radial artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg., there does not exist any schizophrenia in the acute or the subacute state.

3. Analysis of 1350 measurements of the maximum tension of the radial artery in 85 cases of pulmonary tuberculosis shows that at a spontaneously stable tension of the radial artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg., there does not exist any pulmonary tuberculosis.

Here I must express my regret that circumstances have prevented me from carrying out my plan of extending my investigation of the maximum radial tension to the field of leprosy; for a comparative study of the arterial tension in pulmonary tuberculosis and leprosy would undoubtedly have been instructive in many interesting theoretical questions.*

4. Analysis of less than 1000 measurements in each of the other larger groups of mental diseases supports the deduction that at a spontaneously stable maximum tension of the radial artery at a level of more than 140 m.m., not exceeding 150 m.m. Hg., it is highly probable that there does not exist mental disease of any group in acute or subacute state.

5. Young men of psychopathic tendencies, as far as I have observed, have a labile arterial tension at changeable levels of 200—260 m.m. Hg. or more.

6. Feeble-minded persons have a spontaneous radial tension at a continuous level of 150 m.m.

*In the paper of which the present is an abstract, reference is made to the theoretical question, as far as the data on hand enable the author briefly to discuss it.

Hg., with a lower degree of stability; an exception with higher or lower level, indicates some complication, either psychic or somatic, or both.

7. In cases of cyclothymia, when the symptoms subside and remission begins, the maximum tension of the radial artery becomes spontaneously reduced to a level higher than 140, not exceeding 150 m.m. Hg., and during the remission gradually acquires a higher degree of stability. This spontaneous reduction of the maximum arterial tension of the radial artery to 150 m.m. Hg. takes place with the same regularity with which the body temperature is reduced to 98.6 degrees Fahr. when an infectious disease has run its course. An exception is a symptom of complication.

8. In cyclothymoid schizophrenia, when the symptoms subside and a period of remission begins, the arterial tension spontaneously becomes reduced to 150 m.m. Hg., but rarely attains a high grade of stability.

9. During the period of remission in cyclothymia, after the manic as well as after the depressive period, the maximum tension of the radial artery is found continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg., day after day for weeks and months, as long as the remission continues undisturbed. An exception is a sign of complication.

10. During periods of remission in cyclothymoid schizophrenia, the maximum tension of the radial artery is continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg., but more labile than in true cyclothymia.

11. In pulmonary tuberculosis, when improvement takes place, the frequency maximum of the radial arterial tension values gradually approaches the level of 150 m.m. Hg.; on the other hand, when aggravation takes place, the frequency maximum referred to recedes, either gradually or suddenly, to levels further from 150 m.m. Hg.

12. In schizophrenia and other mental diseases, (with few exceptional cases) the maximum tension of the radial artery is promptly reducible to a level higher than 140 m.m., not exceeding 150 m.m. Hg., by the action of iodine used according to a chemotherapeutic technique, which I have already described* and will discuss with more detail in a separate article.

13. In pulmonary tuberculosis the maximum arterial tension is promptly reducible to 150

m.m. Hg. by the action of iodine according to the technique* applied to mental diseases.

14. If the distribution of the several radial arterial tension values is computed, with the exclusion of values observed on days of remission, it will be found that the frequency minimum is at the level of 140-160 m.m. in cyclothymia schizophrenia and other mental diseases in the acute and subacute state.

15. In pulmonary tuberculosis the frequency minimum of all maximum arterial tension values observed is at the level of 140-160 m.m. Hg. The frequency maximum is lower than 140 m.m., and in certain cases there is a frequency maximum higher than 160 m.m. Hg.

16. In healthy young adults of sound habits (including outdoor exercise) the frequency maximum of the radial arterial tension values observed is at the level of 150 m.m. Hg.

From these facts, the following deductions may be drawn:

Inasmuch as the diseases mentioned above (mental diseases in acute or subacute state, psychopathy, and pulmonary tuberculosis) do not exist in persons who have stable arterial tension at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in cyclothymia of manic as well as depressive state and in cyclothymoid schizophrenia the arterial tension during periods of remission becomes spontaneously reduced to a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in pulmonary tuberculosis improvement is associated with a slow and gradual approach of the frequency maximum of all radial arterial tension values observed to a level ever nearer the value of 150 m.m. Hg.;

Inasmuch as in schizophrenia, other mental diseases, psychopathy, and also in pulmonary tuberculosis, the arterial tension is promptly reducible, by chemotherapy, to a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as, during periods of remission in cyclothymia, and also in remissions of cyclothymoid schizophrenia, the maximum tension of the radial artery is found continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in cyclothymia, in schizophrenia, and other mental diseases in acute or subacute state, as well as in pulmonary tuberculosis, the

* Compare Eebsuske, *Orthoarteriotomy*, BOSTON MEDICAL AND SURGICAL JOURNAL, cxcvii, 23, 1917.

frequency minimum of all radialis tension values found is between 140 and 160 m.m. Hg.;

And, finally, inasmuch as in healthy young adults of sound habits the frequency maximum of all radialis arterial tension values found is at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

It stands proven that a maximum tension of the radialis artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg., is the normal arterial tension.

17. Normal arterial tension may possess various degrees of stability.* A spontaneously stable normal arterial tension coincides with a high grade of natural immunity.

18. Any alteration of the arterial tension to values higher than 160 m.m. or lower than 140 m.m. Hg., if it tends to become continuous, is abnormal, at least in the first half of life.

19. Labile arterial tension, higher than 160 m.m. or lower than 140 m.m. Hg., or changeable between higher or lower values, coincides with lower grades of natural immunity, at least in certain types of abnormal arterial tension.

20. Healthy boys 12 to 20 years of age have a maximum tension of the radialis artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg.

21. Boys, 12 to 20 years old, who have abnormal arterial tension of certain types, have lower grades of natural immunity. It is more than probable that among such boys may be found a large proportion of the future cases of schizophrenia and pulmonary tuberculosis. By the aid of measurements of the maximum tension of the radialis artery these classes of boys can be recognized with decidedly increased facility.

22. Only exceptional cases of schizophrenia recover spontaneously normal arterial tension, and a large proportion of the boys with abnormal arterial tension do not recover normal arterial tension under the customary provisions of social hygiene and sanitation.

23. Only exceptionally do psychopathic persons recover normal arterial tension spontaneously. I have seen two cases of psychopathic young men recover normal arterial tension by chemotherapeutic technique, and a few weeks later begin to show a marked improvement in personality. The majority of the class are lodged in the department for dangerous insane, and live year after year with continuous vasomotor unrest at a level of 200 to 260 m.m. or

more, and with unabated intrapsychic and psychomotor unrest. It is more than probable that all prisons of the world are full of these types of arterial tension.

In conclusion, it is safe to say that a general adoption of the practice of measuring the maximum tension of the radialis artery should soon give beneficial results, particularly in the fields of mental diseases, psychopathy, pulmonary tuberculosis, dysarteriotony of youth, and another disease which I am not at liberty to mention because of the limits of my investigation.

Experience gained through my analysis of measurements of the maximum tension of the radialis artery confirms the belief which I have entertained for some years, that sooner or later the time must come when the maximum radialis arterial tension chart in chronic diseases will prove as useful in clinical work as the temperature chart and the pulse frequency charts have proved themselves to be in acute diseases.

Selected Papers.

ON CANCER OF THE TONGUE.*

By D'ARCY POWER, M.B., OXON., F.R.C.S., ENGLAND.
Surgeon to the Lecturer on Surgery at St. Bartholomew's Hospital.

CANCER of the tongue is remarkable in the fact that it is almost entirely a human disease: it is always of one type; it is unknown in children; it is common in men, rare in women; it is not associated with any inherited predisposition to carcinoma. Historically, cancer of the tongue does not become important as a surgical disease until the seventeenth century. The Greek, Latin, and Arabian writers on surgery hardly mention it and so far as can be ascertained at present it was unknown to the Anglo-Saxons.

The first definite notice of cancer of the tongue is the case of Ralph Freeman, who died on March 16, 1634, whilst serving the office of Lord Mayor of London. He suffered from secondary hemorrhage, and it was the opinion of the surgeons and physicians in attendance upon him that a mercurial course might have been advantageous. The second recorded case oc-

* Abstract of The Bradshaw Lecture delivered at the Royal College of Surgeons of England, on Thursday, Nov. 14, 1918, and reprinted from *The Medical Press*.

* Degree of stability ascertained by special tests.

curred in Germany, and was considered a miraculous punishment for cursing the clergy. The story runs that "lately a certain Baron directed his jibes against all and sundry, but kept his most poisonous shafts for the clergy and for those who devoted themselves to God's service. One day a holy brother of good repute, who had been lashed by him, said, 'Your foul tongue has overlong deserved that punishment from an offended God which it will shortly receive.' The Baron rode off undismayed, but a few days afterwards a small swelling began to grow on the side of his tongue. Little by little it increased in size, until it became inoperable, and the Baron confessed and penitent died miserably afflicted." From the middle of the seventeenth century onwards cancer of the tongue became frequent, and English surgeons were busy in devising operations for its cure.

The zoölogical distribution of lingual carcinoma was next considered in the light of the experience of Sir John McFadyean, Principal of the Royal Veterinary College, of Dr. J. A. Murray, Director of the Imperial Cancer Research Fund, and Dr. Anton Sticker. At the present time cancer of the tongue is known to have occurred in one horse, three aged cats, and one old dog; in each case it was of the squamous-celled variety.

It appears fair to assume, therefore, that lingual carcinoma has always occurred in men and domesticated animals: that originally in man it was no more common than it is now in animals, but that from the seventeenth century onwards it has increased out of all proportion in man, while in animals the incidence has remained stationary.

The rate at which cancer of the tongue has increased in man is well shown by the returns of the Registrar-General. Dr. Stevenson, Superintendent of Statistics at Somerset House, wrote, in 1909: "The increase of deaths among males from cancer of the jaw, and especially of the tongue, is remarkable, and can scarcely be explained by improved diagnosis. Although cancer of the tongue presents little difficulty of diagnosis in its later stages, the recorded mortality has increased among males by no less than 228% in 41 years. The increase, moreover, is entirely confined to the male sex."

The possible factors causing this increase in cancer of the tongue were then considered. Irritation has long been looked upon as an im-

portant factor in causing cancer, and the state of the teeth was passed under review to determine whether pyorrhea (peridontitis) and caries had become more common recently. The virulence, but not the amount of pyorrhea, seemed to have increased, while caries does not appear to be more frequent now than it was in some parts of England during prehistoric times. It was noted that the Roman skulls in England had nearly as many carious teeth as Londoners have at the present day, so that if cancer of the tongue was a direct result of carious teeth the disease should have been as well known to the surgeons of Rome as it now is to us.

An examination of the records of St. Bartholomew's Hospital showed that 169 persons were admitted with cancer of the tongue during the years 1909-1916. Nine of the patients were women and 160 men. The proportion of men to women being eighteen to one—the true proportion as shown by the Registrar-General's returns being one woman to eight men. Seven of the women were married, one was unmarried, and the social state of the other is not mentioned. Of the seven married women one gave a history of syphilis, two showed evidence of syphilis, and one was a widow who had only one child alive out of five, the note adding, "She looked as if she drank." One woman had leukoplakia of the tongue at the age of seventeen, and stated that her father had suffered from "abscess of the brain," which was cured by medicine, and was probably a gummatous meningitis. There was no history of syphilis, either acquired or inherited, in the other two married women. The unmarried woman—a nurse—stated that her father died of aneurysm, and she herself had suffered from adolescent paralysis, which came on suddenly, and was cured by medicine. None of the women smoked, and all had bad teeth.

In the case of the men, ninety-three of the patients out of 160 were syphilitic: 62 gave a history of syphilis, and of these 31 showed signs of the disease. The syphilis was invariably of long standing, and taking a few cases in the series without selection, the primary infection was said to have been 26 years, 30 years, 29 years, 40 years, 28 years, 23 years, and 43 years previously. Twenty-six of the patients stated definitely that they had never contracted syphilis, but one of them had suffered from gonorrhea and two had a positive Wassermann re-

action. Many of the patients had drunk beer to excess, but did not, as a rule, acknowledge that they had taken spirits freely.

A Wassermann test had only been performed 26 times, with the result that it was negative in twelve and positive in six cases; in five it was doubtful negative, and in three doubtful positive. These results were compared with those kindly furnished by Captain Arnold Renshaw, R.A.M.C., of the Manchester University Medical School, and Captain Archibald Leitch, R.A.M.C. (T), of the Cancer Hospital, Brompton. The evidence brought forward points to a close association between syphilis and cancer of the tongue. The syphilis may be active; it is more often quiescent, or even extinct, and the conclusion arrived at is that as in the case of some cases of tuberculosis, "syphilis is the bed upon which cancer of the tongue is often born." It further appeared that an increase in the number of deaths from lingual carcinoma has occurred after periods when mercury has temporarily fallen into disuse in the treatment of syphilis. Such insufficient treatment was the rule in the later years of Queen Elizabeth's reign when guaiac, sarsaparilla and the "vegetable" cures displaced original mercurial methods: during the Regency period, when some of the army medical officers nearly succeeded in abolishing the use of mercury, and again in the earlier Victorian era, when the value of potassium iodide was unduly exploited. It is interesting to notice that many of the patients whose cases are recorded at St. Bartholomew's Hospital stated voluntarily that they had been treated with mercury for a fortnight, and three weeks for syphilis, and had then considered themselves cured.

As cancer occurs sometimes in the domesticated animals, syphilis cannot be considered as more than a disposing cause, and some exciting cause must therefore be looked for which has become prevalent recently. The increased consumption of tobacco seems to be such a cause. Before 1868, cigars could be smoked openly by the upper and middle classes of society: pipes were taboo in public, and cigarettes were unknown. Snuff taking was falling into disuse. Smoking in public has increased steadily from 1877, until it is now well-nigh universal among men, women and boys. It is possible, therefore, that smoking is as important in the increasing mortality from cancer of the tongue.

The irritant acts locally in two ways, for it is partly due to the nicotine and partly to the heat, and it is well known from kangri cancer that thermal irritation is a factor in the production of epithelioma. The actual cause of cancer is still undiscovered, but if the main factors are known it should not be impossible to determine its nature.

In conclusion the lecturer thought that it should be possible to reduce cancer of the tongue to the subordinate position it occupied before the seventeenth century in many, and which it still holds in the diseases of animals. This could be effected by a thorough treatment of syphilis in its initial stages. Persons who are treated for syphilis should be told never to smoke, not to drink to excess, and to pay regular visits to the dentist. Such advice should be given when the patient is still under treatment, and should not be deferred until the tongue has become sore. Failure to follow this advice, or a continuance of treatment upon the old lines, will probably be followed by a very large increase in the number of patients suffering from lingual carcinoma. The increase should begin about 1950, and should affect women as well as men, for syphilis is rife at the present time among the younger generation, and both sexes smoke much larger quantities of tobacco than ever before.

American Medical Biographies.

BURNSIDE FOSTER (1861-1917).*

The editor of the *St. Paul Medical Journal*, professor of dermatology, University of Minnesota, and lecturer on the history of medicine, and consultant in dermatology and genito-urinary diseases, Burnside Foster died in his fifty-seventh year, at his home in St. Paul, on the thirteenth day of June, 1917.

He was the son of Dwight Foster and Henriette Perkins Baldwin and was born on the seventh day of May, 1861, in Worcester, Mass. His ancestors on both sides were distinguished people. His father was judge of the Supreme Court of Massachusetts, and his maternal grandfather, Sherman Baldwin of New Haven, was a Governor of Connecticut and a United

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

States Senator. The first Fosters came to Ipswich, Mass., in 1638.

Burnside Foster graduated in arts with the class of 1882 of Yale. He took his medical course at Harvard, graduating in 1885, and spent eighteen months as an interne in the Massachusetts General Hospital, after which he went to Europe, where he studied in Dublin and Vienna. He began active practice in 1888 in Minneapolis, at which time he was assistant to the professor of anatomy in the University of Minnesota. He remained a member of the medical faculty of that institution until his death. In 1891 he established himself in St. Paul and from that time limited his practice to his specialty.

On New Year's Day, 1894, he married Sophia Vernon Hammond, daughter of General John H. Hammond, who served his country during the Civil War. Their three children and his widow survived him.

When the Ramsey County Medical Society established the *St. Paul Medical Journal* in 1898 Foster was appointed editor, a position he held until January 1, 1916. At that time the editing and publishing committee made a statement from which the following is an abstract:

"Dr. Burnside Foster has laid down the editorial burden he has carried for seventeen years with such distinguished success. His scholarly editorials, written in his finished style and faultless English will undoubtedly be missed. The editorial pages of the *Journal* have repeatedly exerted the most widespread influence.

"Dr. Foster was the first to urge the frequent examination of people in apparently good health that they might thus be guided by their physicians in the preservation of their most valuable asset. In recognition of his services in this work he was made a member of the board of trustees of the Life Extension Institute, New York.

"As the result of an attack made by him in the editorial columns of the *Journal*, upon immoral medical advertisements in the daily papers, the postmaster general of the United States, issued an order excluding papers carrying these advertisements from the United States mails. This has purged the announcements of abortionists *et id omne genus*, from the reading matter daily offered to the families of the entire country.

"At a very early date he waged war on the practice of splitting fees. On the question of euthanasia he always upheld the right of the

individual to live his life. The *St. Paul Medical Journal*, under his leadership, has the unique distinction of being the only organ of a county medical society that has survived the diseases of infancy."

In 1909 Dr. Foster was invited to address the Association of Life Insurance Presidents, New York City, on methods of increasing the longevity of their policy holders.

Burnside Foster excelled in all the social virtues. His home and family were his most highly prized possessions and there it was that he was seen at his best. As a host he was perfect, and no one privileged to enjoy the hospitality of the home presided over by the genial physician and his charming wife could ever forget such a rare experience.

In the midst of his numerous activities at the early age of fifty-six, after a short illness, he breathed his last at his home in the early summer of 1917.

H. LONGSTREET TAYLOR, M.D.

Book Reviews.

Military Hygiene and Sanitation. By FRANK R. KEEFER, A.M., M.D. (Second Edition.) Philadelphia and London: W. B. Saunders Company. 1918.

The scope of military hygiene and sanitation includes all the problems encountered in maintaining the health of a civil community with the additional difficulties arising from conditions caused by the work and environment of the soldier. The second edition of *Military Hygiene and Sanitation* presents clearly every phase of the subject. The care of troops, the essentials of personal hygiene, the necessity of physical training, and suitable food, clothing, and equipment are discussed. Of great value are the chapters dealing with preventable diseases—their classification, causes, and means of prevention. The difficulties of securing a pure water supply, and methods of providing for sanitation of posts, barracks, and camps are considered. Perhaps the most valuable and timely addition to this edition is the information relative to the evolution of trench warfare. The soldiers are exposed to special diseases because of their environment; personal hygiene and general sanitation are particularly difficult to maintain; and the type of wound resulting from the projectiles used in modern warfare is peculiarly susceptible to infection. Many of these problems are presented in this book. Special chapters deal with tropic and arctic service.

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By JAMES PETER WARBASE, M.D., Fellow of the American College of Surgeons, American Medical Association, American Academy of Medicine, New York Academy of Medicine; Formerly Attending Surgeon to the Methodist Episcopal Hospital, Brooklyn, New York. In Three Volumes, with 2,400 Illustrations. Volume I. Philadelphia and London: W. B. Saunders Company. 1918.

This volume, the first of three, contains 900 pages of text, and a 50-page index; it treats of those subjects usually grouped under the head of surgical principles (wounds, inflammation, infectious, anesthesia, tumors, etc.), and also surgical conditions of the blood vessels, lymphatics, bones, muscle, skin, and nerves.

We quote from the preface which, in common with most prefaces, should be carefully read by everyone who opens the book. Unfortunately, most readers begin beyond the preface and never return to it.

"This work has been written in the interest of the surgical patient. The object has been to place in the hands of the surgeon the means for rendering help in every surgical condition under all circumstances. The aim has been to make this information easily accessible, and its application practical.

"In most surgical diseases there is an ideal course of treatment which may be pursued and which represents the highest possibility of surgery. The author has endeavored to present this maximum of treatment. The author is aware that circumstances may surround both the patient and the surgeon which make impossible the applying of the ideal measures, or rendering such attempts inexpedient.

"Surgery is an art based upon a complex of sciences. It is always in a developmental stage. Accordingly the author has endeavored to inspire the reader with the spirit of originality, to teach him not only how to do, but to suggest to him new lines of action, to set him thinking on the problem of treatment from his own standpoint.

"It is assumed that the surgeon who turns to these pages for help is familiar with the fundamentals of surgical pathology and diagnosis.

"Prophylaxis is regarded as a part of pre-treatment, and prognosis is so intimately associated with the results of treatment, that each is accorded as much attention as possible.

"While large consideration has been given to new methods, nothing has been introduced for the sake of novelty. In the presence of the newer modes of treatment, the fact has not been lost sight of, that there are old methods and old agents of surgical therapy which have sur-

vived the trials of time and which are destined to outlive the newer things which are now vaulted in their places.

"That this work may prove a practical source of strength to the surgeon in his encounters with disease, and that it may contribute to the promotion of the highest ideals of surgery, is the purpose which has prompted its creation."

The book creates a distinctly favorable impression. The author, who has retired from active hospital practice, has evidently taken his own time to collect his material, and to clarify and systematize his surgical judgment and conclusions. He writes after he has acquired his own surgical experience, not before he developed it. He maintains, nevertheless, an open mind.

The volume is characterized by an evident desire to mention every surgical condition of any importance, and every method of treatment which is worthy of trial. Here and there are omissions, or rather references, which seem too brief, as, for instance, the abduction treatment of fracture of surgical neck of femur, as described by Whitman, and certain fractures of the lower end of the femur, emphasized by Cotton.

The chapter (75 pages) on anesthesia is altogether admirable.

Illustrations are numerous, accurate, and sharp: those which are borrowed seem as if reproduced from entirely new plates. The paper, though glazed, is of excellent quality.

The book is strongly recommended to the surgical practitioner.

Diseases of the Male Urethra, Including Impotence and Sterility. IRVIN S. KNOLL, B.S., M.D., F.A.C.S., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital; Associate Genito-Urinary Surgeon, Michael Reese Hospital, Chicago. Illustrated. Philadelphia and London: W. B. Saunders Company. 1918.

This book takes up in simple, direct fashion the consideration of the diseases of the male urethra, and the work is done in a most satisfactory way. The book itself, with its many admirable plates, some of which are colored, is unusually well made. The subjects included in its contents are presented with a practical brevity which is at once adequate and pleasing.

Especially to be commended are the parts of the book devoted to treatment. The descriptions of various operations with their admirable illustrations, such as Belfield's vasotomy, Hagner's epididymotomy, and the operation for prostatic abscess, deserve the greatest credit. There is an adequate index, and both the type and paper are of the best. The author has put forth a book which is really worth while.

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THE DEATH OF DR. SPURZHEIM.

IN the issue of the JOURNAL for February 6, we commented editorially on the life and work of Dr. Spurzheim and the prevalence which his cult of phrenology attained in this community some 90 years ago. It is remarkable to what an extent the teaching of this man imposed upon the credulity not merely of the gullible public but of the regular profession at the time. The extent to which Dr. Spurzheim's apparently blameless and charming personal character impressed his Boston contemporaries is evidenced in the following account of his death, which appeared as the leading editorial in the issue of the JOURNAL for November 14, 1832:

It is our melancholy duty to record the death of a great and good man. Dr. Spurzheim, so well known in Europe and America as the companion of Dr. Gall—as a deep thinker and close observer of human nature—as an interesting teacher of moral and intellectual philosophy, the author of several works on the anatomy and physiology of the brain and nervous system—

so highly esteemed for his eminent social virtues and moral worth, and so much beloved by all who shared his friendship, has been prematurely removed from this new scene of his contemplated labors. He died on Saturday evening, at his residence in Pearl street, after an illness of about four weeks, deeply lamented by the friends he had made during his short residence in this city; his decease will also be a source of sorrow and disappointment to the inhabitants generally, not only of Boston, but also of other cities in other states, where his visits have been solicited, and anticipated with unusual interest.

Dr. Spurzheim was born near Treves, in Germany, in 1776. He arrived in this country in August last. Just three weeks ago this day he delivered his last lecture. He was then evidently laboring under serious indisposition, contracted by occasional exposure to the cold night air after being much heated at his lectures. The greater part of Wednesday night he was disturbed by rigors and restlessness; and although too ill to leave his apartments the next day, he was unwilling to submit himself to active medical treatment. This unwillingness was not removed until his disease, which was a typhus fever, had so far advanced that his medical attendants deemed it too late to expect benefit from medication. His brain was chiefly implicated, his reason departed, and he died without apparent suffering. He was anxious to live to accomplish the great moral purposes he had in view, but looked upon death without dread, and with that composure and serenity which might be expected from a Christian philosopher.

On the morning after his decease, his friends assembled at his apartments to consider what proceedings were rendered necessary and proper by this melancholy event; and it was decided that the body should be examined and embalmed, and a bust taken, under the direction of Drs. J. C. Warren, J. Jackson, G. C. Shattuck, W. Channing, G. Parkman, J. Ware, E. Reynolds, C. Robbins, W. Lewis, J. G. Stevenson, J. Fisher, W. Grigg, and S. G. Howe.

The care and conduct of the funeral obsequies were committed to Hon. J. Quincy, President of Harvard University; Hon. H. G. Otis, N. Bowditch, LL.D.; Joseph Story, LL.D.; J. Tuckerman, S.T.D.; Charles Follen, J.U.D.; J. Barber, M.D.; Charles Beck, J.U.D.; and W. Grigg, M.D.

It was further provided, that the papers, casts, and other property of the deceased, should be committed to John Pickering, LL.D.; N. Bowditch, LL.D.; T. W. Ward, Esq., and Nahum Capen, Esq., to make such disposition of the same as the law provides in such cases.

It is understood that the remains of the deceased will be interred at Mount Auburn, and an address made on the occasion by a gentleman who enjoyed a large share of his friendship.

and was particularly acquainted with his great and important purposes, as well as his private feelings and character.

The medical gentlemen above named proceeded without delay, to execute the trust committed to them. A good cast has been taken, as well as several portraits. The appearances on examining the brain were such as are usually attributed to congestion; the minute vessels of the membranes being strongly injected, and presenting an appearance of unusual redness. The edges of the valves of the aorta were slightly indurated, and extensive adhesions of the omentum to the parietal peritoneum about the right iliac region indicated some recent or remote morbid action in that part. Further than this we could discern no mark of disease in any organ that was examined, although three peculiarities of structure were remarked:—one, the unusual size of the aorta, and the natural and proportional, not morbid thickness of its coats; the second, the smallness of the arteria innominata, which was no larger than the left carotid or left subclavian; and the third, a bilobate spleen. It should be remembered that the destination* of the body precluded the possibility of a very minute examination of the two most important organs.

Without traducing the personal character of "a great and good man," it is obvious in the light of subsequent history that Dr. Spurzheim's pseudo-medical propaganda was an early example of German scientific fake. The spurious character of phrenology soon became patent to a later generation. So wise a man as Dr. Oliver Wendell Holmes was one of the earliest to expose its true nature in his delightful essay on phrenology as a pseudo-science in "The Professor at the Breakfast Table."

Having been photographed, and stereographed, and chromatographed, or done in colors, it only remained to be phrenologized. A polite note from Messrs. Bumpus and Crane, requesting our attendance at the Physiological Emporium, was too tempting to be resisted. We repaired to that scientific Golgotha.

Messrs. Bumpus and Crane are arranged on the plan of the man and the woman in the toy called a "weather-house," both on the same wooden arm suspended on a pivot,—so that when one come to the door, the other retires backwards, and *vice versa*. The more particular speciality of one is to lubricate your entrance and exit,—that of the other to polish you off phrenologically in the recesses of the establishment. Suppose yourself in a room full of casts and pictures, before a counterful of books with taking titles. I wonder if the picture of the brain is there, "approved by a noted phrenol-

ogist, which was copied from *my*, the Professor's, folio plate in the work of Gall and Spurzheim. An extra convolution, No. 9, *Destructiveness*, according to the list beneath, which was not to be seen in the plate, itself a copy of Nature, was very liberally supplied by the artist, to meet the wants of the catalogue of "organs." Professor Bumpus is seated in front of a row of women,—horn-combers and gold-beaders, or somewhere about that range of life,—looking so credulous, that, if any Second-Advent Miller or Joe Smith should come along, he could string the whole lot of them on his cheapest lie, as a boy strings a dozen "shiners" on a stripped twig of willow.

The Professor (meaning ourselves) is in a hurry, as usual; let the horn-combers wait,—he shall be bumped without inspecting the ante-chamber.

Tape round the head,—22 inches. (Come on, old 23 inches, if you think you are the better man!)

Feels thorax and arm, and muzzles round among muscles as those horrid old women poke their fingers into the salt-meat on the provision-stall at the Quincy Market. Vitality, No. 5 or 6, or something or other. *Victuality* (organ at epigastrium), some other number equally significant.

Mild shampooing of the head now commences. Extraordinary revelations! Cupidiphilous, 6! Hymeniphilous, 6+! Paediphilous, 5! Deipniphilous, 8! and so on. Meant for a linguist.—Invaluable information. Will invest in grammars and dictionaries immediately.—I have nothing against the grand total of my phrenological endowments.

I never set great store on my head, and did not think Messrs. Bumpus and Crane would give me so good a lot of organs as they did, especially considering that I was a *dead-head* on that occasion. Much obliged to them for their politeness. They have been useful in their way by calling attention to important physiological facts. (This concession is due to our immense bump of Candor.)

A SHORT LECTURE ON PHRENOLOGY, READ TO THE BOARDERS AT OUR BREAKFAST TABLE.

I shall begin, my friends, with the definition of a *Pseudo-science*. A Pseudo-science consists of a *nomenclature*, with self-adjusting arrangement, by which all positive evidence, or such as favors its doctrines, is admitted, and all negative evidence, or such as tells against it, is excluded. It is invariably connected with some lucrative practical application. Its professors and practitioners are usually shrewd people; they are very serious with the public, but wink and laugh a good deal among themselves. The believing multitude consists of women of both sexes, feeble-minded inquirers, practical optimists, people who always get cheated in buying horses, philanthropists who insist on hurrying

* Spurzheim's skull is still preserved in the Warren Museum of the Harvard Medical School.

up the millennium, and others of this class, with here and there a clergyman, less frequently a lawyer, very rarely a physician, and almost never a horse-jockey or a member of the detective police.—I do not say that Phrenology was one of the Pseudo-sciences.

Pseudo-science does not necessarily consist wholly of lies. It does contain many truths, and even valuable ones. The rottenest bank starts with a little specie. It puts out a thousand promises to pay on the strength of a single dollar, but the dollar is very commonly a good one. The practitioners of the Pseudo-sciences know that common minds, after they have been baited with a real fact or two, will jump at the merest rag of a lie, or even at the bare hook. When we have one fact found, we are very apt to supply the next out of our own imagination. (How many persons can read Judges XV. 16 correctly the first time?) The Pseudo-sciences take advantage of this.—I did not say that it was so with Phrenology.

I have rarely met a sensible man who would not allow that there was *something* in Phrenology. A broad, high forehead, it is commonly agreed, promises intellect; one that is "villainous low" and has a huge hind-head back of it, is wont to mark an animal nature. I have as rarely met an unbiassed and sensible man who really believed in the bumps. It is observed, however, that persons with what the Phrenologists call "good heads" are more prone than others toward plenary belief in the doctrine.

It is so hard to prove a negative, that, if a man should assert that the moon was in truth a green cheese, formed by the coagulable substance of the Milky Way, and challenge me to prove the contrary, I might be puzzled. But if he offer to sell me a ton of this lunar cheese, I call on him to prove the truth of the caseous nature of our satellite, before I purchase.

It is not necessary to prove the falsity of the phrenological statement. It is only necessary to show that its truth is not proved, and cannot be, by the common course of argument. The walls of the head are double, with a great air-chamber between them, over the smallest and most closely crowded "organs." Can you tell how much money there is in a safe, which also has thick double walls, by kneading its knobs with your fingers? So when a man fumbles about my forehead, and talks about the organs of *Individuality*, *Size*, etc., I trust him as much as I should if he felt of the outside of my strong-box and told me that there was a five-dollar or a ten-dollar-bill under this or that particular rivet. Perhaps there is; *only he doesn't know anything about it*. But this is a point that I, the Professor, understand, my friends, or ought to, certainly, better than you do. The next argument you will all appreciate.

I proceed, therefore, to explain the self-adjusting mechanism of Phrenology, which is

very similar to that of the Pseudo-sciences. An example will show itself most conveniently.

A. is a notorious thief. Messrs. Bumpus and Crane examine him and find a good-sized organ of Acquisitiveness. Positive fact for Phrenology. Casts and drawings of A. are multiplied, and the bump *does not lose* in the act of copying.—I did not say it gained.—What do you look so for? (to the boarders.)

Presently B. turns up, a bigger thief than A. But B. has no bump at all over Acquisitiveness. Negative fact; goes against Phrenology.—Not a bit of it. Don't you see how small Conscientiousness is? *That's* the reason B. stole.

And then comes C., ten times as much a thief as either A. or B.,—used to steal before he was weaned, and would pick one of his own pockets and put its contents in another, if he could find no other way of committing petty larceny. Unfortunately, C. has a *hollow*, instead of a bump, over Acquisitiveness. Ah, but just look and see what a bump of Alimentiveness! Did not C. buy nuts and gingerbread, when a boy, with the money he stole? Of course you see why he is a thief, and how his example confirms our noble science.

At last comes along a case which is apparently a *settler*, for there is a little brain with vast and varied powers,—a case like that of Byron, for instance. Then comes out the grand reserve-reason which covers everything and renders it simply impossible ever to corner a Phrenologist. "It is not the size alone, but the *quality* of an organ, which determines its degree of power."

Oh! oh! I see.—The argument may be briefly stated thus by the Phrenologist: "Heads I win, tails you lose." Well, that's convenient.

It must be confessed that Phrenology has a certain resemblance to the Pseudo-sciences. I did not say it was a Pseudo-science.

I have often met persons who have been altogether struck up and amazed at the accuracy with which some wandering Professor of Phrenology had read their characters written upon their skull. Of course the Professor acquires his information solely through his cranial inspections and manipulations.—What are you laughing at? (to the boarders.)—But let us just *suppose*, for a moment, that a tolerably cunning fellow, who did not know or care anything about Phrenology, should open a shop and undertake to read off people's characters at fifty cents or a dollar apiece. Let us see how well he could get along without the "organs."

I will suppose myself to set up such a shop. I would invest one hundred dollars, more or less, in casts of brains, skulls, charts, and other matters that would make the most show for the money. That would do to begin with. I would then advertise myself as the celebrated Professor Brainey, or whatever name I might

choose, and wait for my first customer. My first customer is a middle-aged man. I look at him,—ask him a question or two, so as to hear him talk. When I have got the hang of him, I ask him to sit down, and proceed to fumble his skull, dictating as follows:

SCALE FROM 1 TO 10.

LIST OF FACULTIES FOR CUSTOMER	PRIVATE NOTES FOR MY PUPIL Each to be accompanied with a wink.
Amativeness, 7	Most men love the conflicting sex, and all men like to be told they do.
Alimentiveness, 8	Don't you see that he has burst off his lowest waistcoat button with feeding, hey?
Acquisitiveness, 8	Of course—a middle-aged Yankee.
Approbativeness, 7+	Hat well brushed. Hair ditto, mark the effect of that <i>plus</i> sign.
Self esteem, 6	His face shows that.
Benevolence, 9	That'll please him.
Conscientiousness, 8½	That fraction looks first-rate.
Mirthfulness, 7	Has laughed twice since he came in.
Ideality, 9	That sounds well.
Form, Size, Weight, Color, Locality, Eventuality, etc., etc.	Average everything that can't be guessed.

And so of the other faculties.

Of course, you know, that isn't the way the Phenologists do. They go only by the bumps. —What do you keep laughing so for? (to the boarders.) I only said that is the way *I* should practise "Phrenology" for a living.

If no prophet is without honor in his own country, it is sometimes in his own country that the false prophet's fallacy is first perceived. An issue of the *London Medical Gazette* early in 1833 contains the following "very accurate and liberal notice of this distinguished philosopher," which was quoted with editorial comment in the BOSTON MEDICAL AND SURGICAL JOURNAL of March 27, 1833:

"This indefatigable follower of Gall died last month at Boston, United States, of 'brain fever,' in the fifty-eighth year of his age. We know not on whom, if on any, his mantle will descend; but we hope nobody will be foolish enough to bring it across the Atlantic." We can assure the Editor of the *Gazette* that a highly gifted individual has been found in this city foolish enough to assume the mantle of our departed friend, and that he has already crossed the Atlantic with the design of preparing himself the better to bear the responsibility and the honor of his assumption.

In the issue of the JOURNAL for April 10, 1833, appeared finally the following French comment on the life and labors of Dr. Spurzheim and on a portrait by his son-in-law. Even

in connection with a German pseudo-scientist, it is of pleasant interest to note the cordial and harmonious agreement between French and American opinion at that time.

Soon after the decease of Dr. Spurzheim, we forwarded to his relatives, through a mercantile friend in Paris, those numbers of this JOURNAL that contained an account of his death, and the consequent proceedings of his friends. The receipt of these communications has been acknowledged; and we present below an extract from our friend's letter, as it contains some information which it may be useful for those to have, who possess anything that can illustrate the character or objects of Dr. S., or that can throw any light on the history of his short but eminent career whilst in this country.

Paris, February 6th, 1833.

My dear Sir:

I received your interesting letter of the 17th of November in due course; and as soon as I could ascertain the address of one of Dr. Spurzheim's connections in Paris, lost no time in transmitting the papers you sent together with the intelligence conveyed in your letter relating to the same subject. This intelligence has proved extremely acceptable to the friends of the late Dr. S., as appears by the enclosed note from Mr. Richard, which I send, that you may notice his intention to publish an account of the life and scientific labors of the distinguished individual whose bereavement to society at large is so keenly felt.

Should it be in your power to contribute any further details respecting Dr. Spurzheim, from your own knowledge or gathered from his friends and admirers in Boston, I offer myself as the organ of communication with his relations, who are mostly in Switzerland. Men possessed of such moral worth and such examples of benevolence and charity united to extraordinary powers of mind are too rare in the world—and their removal is, indeed, a cause for general mourning. How poignant, then, must be the grief of those who, in addition to the common tie which links together society, are bound by the sacred one of kindred!

The respect shown to the memory of this great and good man reflects much honor upon the citizens of Boston, and affords an additional proof of the satisfactory state of morals and intellectual cultivation which as a Bostonian, I am proud to feel is diffused so widely among the inhabitants of my native place.

Believe me, dear Sir,

Yours very faithfully

The name and address of the writer of the above are left at the office of this JOURNAL, at the disposal of any one who is desirous of availing of his polite offer. We here append the note of M. Richard, which is referred to above:

Monsieur:

J'ai reçu les journaux américains que vous avez bien m'adresser, et je m'empresserai de les communiquer aux parents et amis du Dr. Spurzheim. Déjà plusieurs d'entre eux à qui j'en ai fait part en ont été fort touchés, et se joignent à moi pour vous remercier, vous et M. le Dr. Robbins, de votre attention délicate. Dans toute la vivacité de nos regrets et de notre douleur, il y a du moins pour nous une consolation à penser que l'homme excellent, le savant illustre, dont nous déplorons la perte, a été apprécié

aux États Unis selon son mérite—qu'il y a trouvé des sympathies et des amis, et que ses derniers moments ont été entourés des soins les plus tendres et les plus dévoués.

Ce que caractérisait éminemment Dr. Spurzheim c'était son côté moral, sa bienveillance, et son humanité. Il étudiait la science de l'homme avec amour, parce qu'il la croyait éminemment utile à notre amélioration et à notre bonheur. Il s'était promis bien des hautes jouissances en partant pour l'Amérique, et il se proposait pour l'avenir bien des travaux intéressants. Pourquoi la mort a-t-elle brisé les unes et les autres?

L'intérêt qu'il a inspiré, l'estime qu'on lui a portée et les honneurs qui ont été rendus à sa mémoire par les habitants de Boston, font à la fois l'éloge de vos concitoyens et celui du Dr. Spurzheim.

Agréez, Monsieur, l'assurance de ma considération distinguée.

J. DAVID RICHARD.

Paris, 24 Janvier, 1833, Rue du Regard, 6.

P. S.—Si quelques nouveaux détails, quelque publication nouvelle concernant Dr. Spurzheim, vous parvenaient d'Amérique, vous obligerez infiniment des parents et amis en les leur faisant connaître. Déjà M. — a eu la bonté de se charger de nous procurer quelques exemplaires d'un portrait lithographié du Docteur, annoncé par un des journaux que vous avez eu l'obligeance de m'envoyer. Je me propose d'écrire sur la vie et les travaux de Dr. Spurzheim, une notice aussi complète qu'il me sera possible; et M. St. Bruyères, son beau-fils, a l'intention de peindre un grand portrait du Docteur. L'un et l'autre avons besoin de rappeler tous nos souvenirs, et de nous entourer de tous les lumières.

A CODE OF FACTORY LIGHTING.

A CODE of lighting for factories, mills, and other work places is the subject of an article which is contained in the weekly report of the U. S. Public Health Service for January 24, 1919. By permission of Mr. Samuel Gompers, chairman of the committee on labor, a set of rules which have been officially approved by the Illuminating Engineering Society and have been tried out for several years under working conditions, is reported.

Recommendation has been made by this committee that the code outlined below be put into practice in every state in the country. That this measure is a most desirable and important one is not to be questioned. Proper environment tends to higher standards of efficiency among workers. Under proper illuminating conditions there is an increased output because the effects of good light, both natural and artificial, include the following:

1. Reduction of accidents.
2. Greater accuracy in workmanship.
3. Decreased spoilage of product.
4. Increased production for the same labor cost.
5. Less eye strain.

6. Better working and living conditions.
7. Greater contentment of the workmen.
8. Better order, cleanliness, and neatness in the plant.
9. Easier supervision of the men.

Rules for artificial light which have been found most beneficial cover the intensity required, the shading of lamps, distribution of light on work, emergency lighting, and switching and controlling apparatus. Intensity required is explained in the following table:

	FOOT CANDLES ¹ AT THE WORK.	
	Ordinary practice	Minimum.
Roadways and yard thoroughfares.....	0.05—0.25	0.02
(a) Storage spaces.....	.50—1.00	.25
(b) Stairways, passageways, aisles.....	.75—2.00	.25
(c) Rough manufacturing, such as rough machining, rough bench work.....	2.00—4.00	1.25
(d) Fine manufacturing, involving closer discrimination of detail.....	3.00—6.00	2.00
(e) Fine manufacturing, such as fine lathe work, pattern and tool making, light-colored textiles.....	4.00—8.00	3.00
(f) Special cases of fine work, such as watchmaking, engraving, drafting, dark-colored textiles.....	10.00—15.00	5.00
(g) Office work, such as accounting, typewriting, etc.....	4.00—8.00	2.00
(h)		

¹The foot-candle, the common unit of illumination, is the lighting effect produced upon an object by a standard candle at a distance of 1 foot; at 2 feet the effect would be not one-half foot-candle, but one-fourth foot-candle, etc. A lamp which would give off 16 candlepower uniformly in all directions would produce a uniform illumination of 1 foot-candle at a distance of 4 feet in any direction.

NOTE.—Measurements of illumination are to be made at the work with a properly standardized portable photometer.

Following is a brief summary of the code:

Section 1—Daylight. In every work it is necessary that sufficient daylight be supplied through proper means. Each employee should have adequate natural light and many provisions for diffusion and adjustment of natural

light are suggested under this heading. If the sunshine is bright it must be diffused and if the days are dull, steps should be taken to aid in making up for the loss of full daylight.

Section II.—Value of Adequate Illumination. Accurate data reducing the increased output to a dollars and cents basis under specific improvement in lighting is now at hand and a poor lighting system has been proven to be a serious handicap to the factory owner who seeks money value. A good lighting system will easily pay for itself in the time saved for the workmen.

Section III.—Old and New Lamps. Consideration of the eye as a delicate organ has resulted in the remarkable lighting improvements now existing in factories, mills, offices, etc., which were heretofore scarcely thought of.

Section IV.—Effects on Factory and Mill Lighting Produced by Modern Lamps. A new era in industrial illumination has become possible with the introduction of scientific installation of lighting units, suiting each to the location and class of work for which it is best adapted.

Section V.—Overhead and Specific Methods of Artificial Lighting. Nowadays it is possible to eliminate to a great extent the individual lamps by providing overhead gas or electric lamps, thereby saving floor space, and is an effective means of lighting a large workroom.

Section VI.—Lighting Circuits for Electric Lamps and Supply Mains for Gas Lamps. It is important that the supply circuits for the lamps be kept strictly separate in order to avoid varying voltage, which is apt to result if the motors are connected to the same circuits with the lamps. It is also advisable to place gas lamps on supply lines separate from those delivering gas for power purposes.

Section VII.—Control of Lamps and Arrangement of Switches. Where a large number of lamps is used it is advisable that a large number of control circuits be maintained. Not all the lamps will be used at the same time, and additional switching is in reality a saver of energy when it permits half of a group of lamps to be turned off when the other half must necessarily be turned on.

Section VIII.—Systematic Procedure Should be Followed in Changing a Poor Lighting System over to an Improved Arrangement. Care and consideration should be used and time for study given to the locations to be lighted, since

a uniform and symmetrical installation is best prepared for in advance of its completion.

Section IX.—Reflectors and Their Effect on Efficiency. Better conditions which surround the eyes increase their function, and the type of reflector best suited to the employee's work should be carefully considered.

Section X.—Side Light Important in Some Factory and Mill Operations. Two methods are suggested for accomplishing this result,—one to lower the lamps and the other to use broader distributing reflectors than are called for by the rules which consider uniformity of the downward illumination only.

Section XI.—Maintenance. Provision Should be Made for Systematic Upkeep of Natural and Artificial Lighting. Regular window, lamp, and reflector cleaning should be a part of the routine of every factory, mill, or group of buildings. Dirty windows necessitate the increased use of artificial light, and darkness due to dirt enhances the danger of accident. Careful observation of this important measure should be observed.

Section XII.—Expert Assistance Suggested. The wide experience of experts in the lightning field is advantageous. Many points come up for solution which can only be solved by an expert.

Section XIII.—Other Features of Eye Protection. Care should be exercised by employers for those under their jurisdiction, against welding, etc., in which there is danger of direct eye injury.

THE PROPAGANDA FOR ANARCHY IN THE UNITED STATES.

ALL good citizens, including us, the doctors, are deeply interested in the continued reign of Law and Order in the United States. That an attempt to undermine public security in this free country is in full swing is, however, a startling fact.

In Washington, in a building belonging to the Government itself (!), anarchistic sentiments were freely expressed a few days ago. Still more astonishing is the report that three members of the House of Representatives were present at this meeting.

In Philadelphia, in a schoolhouse, the property of the City Government (!), similar sentiments have been expressed. It is even said that

"there are 10,000 Reds" in that city and that they are soliciting and *obtaining* recruits, by means of public meetings, pamphlets, and personal solicitation.

In the *Public Ledger*, one Sklaroff, the executive secretary of the Socialists, is reported to have said, "We are preparing for the day of revolutionizing of this country's government." This same Russian intruder, and eminently undesirable citizen, boasts that he is not and means never to become naturalized. His first and only allegiance is to Russia.

This anarchist even charges the public school teachers and college professors with aiding in the dissemination of their unholy doctrines.

It is a genuine pleasure to be able to assert that we do not know a single member of our profession who has been misled into the ranks of the Bolsheviks or their congenial fellow-workers, the I. W. W.'s. We are all united in the support of Freedom and Orderly Government.

We hope the Government, while granting freedom of speech will *not* grant unbridled license. The Espionage Act is happily still in force. Let its safeguards and its penalties be enforced to the limit. We observe with pleasure that many of these anarchists are being deported. Surely it is most desirable that these Washington and Philadelphia agitators should follow. We gladly grant asylum to deserving foreigners who have come here, provided they will be industrious and law-abiding citizens, but we do *not* propose that our homes shall be burned down by our guests. We do *not* mean to allow them to reduce the United States to the terrible plight of Russia, with anarchy and assassination in the saddle.

Is the Department of Justice not going to do something about these Philadelphia anarchists?

COUNCIL OF NATIONAL DEFENSE.

THE Council of National Defense authorizes the following:

Early in February each physician in the United States, exclusive of those who served in the Medical Corps of the Army for the past two years and members of the Volunteer Medical Service Corps, received a communication from the Council of National Defense, requesting that he fill out and return promptly to the Washing-

ton office an accompanying questionnaire, so that there may be on file in Washington complete individual information covering the members of the profession. Simultaneously with the distribution of these questionnaires, state and county representatives of the Volunteer Medical Service Corps were instructed to urge all doctors in their communities to comply promptly with the request of the Council to fill out and forward promptly to Washington the blanks sent them; and to advise those who by any chance failed to receive blanks, to communicate with the Council of National Defense at once in order that application blanks might be furnished them.

The Volunteer Medical Service Corps was organized early in 1918 to serve the Government during the emergency of war. As this emergency has ceased to exist, active membership in the Corps is no longer solicited. However, the survey initiated by this organization last year has proved of such value as a source of information concerning the individual members of the medical profession that the Surgeons-General of the Army, Navy, and Public Health Service have requested the Council of National Defense to complete it so as to include every doctor in the country, in order that a permanent record of the profession may at all times be available for reference in future emergencies. Upon their completion, the records will be transferred to the Surgeon-General's library, where they will be kept up to date by a force assigned for the purpose, and be accessible to all government bureaus.

Every physician is requested to coöperate with the Council of National Defense, Washington, D. C., requesting that a blank be sent him if, through an oversight, he did not receive one.

INFLUENZA EPIDEMIC IN 1833.

IN the *Doctor's Dilemma*, recently produced in Boston, Bernard Shaw has shown that in many instances discoveries which are considered new by members of the medical profession have received the attention of physicians in former years. In this connection, it has been of interest to notice in looking over an issue of the JOURNAL, for April 3, 1833, the following note on an epidemic of influenza in Russia in that year:

"This epidemic was, at our last accounts, extremely rife at St. Petersburg and Moscow. In St. Petersburg alone, it is said that 100,000 persons were suffering from it, and that the business and public amusements of both places are almost entirely arrested by its extreme prevalence."

MEDICAL NOTES.

INFLUENZA EPIDEMIC PREVALENCE IN THE UNITED STATES.—For the week ended January, 1919, reports from State health officers indicate increases in the number of cases as compared with the preceding week in the following states: Alabama, Arkansas, Connecticut, Florida, Louisiana, North Carolina, Oregon, South Carolina, Vermont, Virginia, and Washington. Little change is thus evidenced in the general situation throughout the country. In the following states there is a decrease in the number of cases reported: California, Indiana, Iowa, Kansas, Maine, New Jersey, Ohio, and Oklahoma. There was an increase of about 25 per cent. of reported cases in zones surrounding Army camps as compared with the preceding week.

AMERICAN JOURNAL OF CARE FOR CRIPPLES.—The *American Journal of Care for Cripples*, which is the only special periodical in English on provision for the disabled, becomes a monthly with its January issue, according to announcement by its editor, Douglas C. McMurtrie. Although dealing extensively with the rehabilitation of the invalided soldier, the *Journal* is in no sense a war product, as it is now entering upon its eighth volume.

This periodical will contain in the future the studies, translations, and abstracts produced by the research department of the Red Cross Institute for Crippled and Disabled Men, which material has hitherto appeared in a special series of publications. The *Journal* also continues as the official organ of the Federation of Associations for Cripples.

CRAIG COLONY FOR EPILEPTICS, NEW YORK.—The Craig Colony for Epileptics, Sonyea, New York, was founded in 1894, for the reception of epileptics of all ages, excluding epileptics who are insane or who are markedly delinquent. The twenty-fifth annual report describes the work done by the colony during the year 1918. Two

one-story brick dormitories have been erected, which, when completed and equipped, can provide for 200 male patients of the more helpless class. The curriculum of the Colony school for younger patients has remained practically unchanged, with three scholastic teachers, a teacher of sloyd, a bandmaster, and an arts and crafts teacher giving courses of instruction. In the trade school, instruction in willow ware has resulted in efficient work.

There have been 170 new patients admitted during the year, and 188 persons have either been discharged or have died. There has been a daily average attendance during the year of 1,447.40 epileptics. This report contains pathological statistics and the case histories and autopsy reports of many patients.

HEALTH OF AMERICAN TROOPS IN RUSSIA.—A recent report of the conditions among the American troops in Russia states that the health of the men is good and less than four per cent. are in hospitals from all causes. There have been no infectious diseases. The winter has been mild, the food suitable and sufficient, and the sanitation has been improved as much as possible. There are hospital accommodations for 20 per cent. of the American and Allied troops, and they are being increased. An ambulance train is equipped for 100 cases, and there are one hundred ambulances and sleighs.

WAR MORTALITY RATES.—General March is reported to have announced that the number of deaths from disease has been less than the number due to death in battle. In past wars, the mortality from disease has usually exceeded the number of lives lost under fire. Statistics show that the battle death rate for the entire American Army in this war was 20 per 1,000 per year. In the Expeditionary Forces it was 57 per 1,000 per year. The disease death rate was 17 per 1,000 per year in the Expeditionary Forces and 16 in the Army at home. The battle death rate in the British Expeditionary Forces was 110 per 1,000 per year. It is the belief of General March that the lower death rate from disease has been due largely to the inoculation requirement of the Army and to the efficient work of the Medical Corps. If there had been no epidemic of influenza, the disease rate would probably have been diminished by one-half.

DEATHS FROM INFLUENZA IN MEXICO.—There have been approximately 432,000 deaths from influenza during the epidemic in Mexico.

RESIGNATION OF DR. JULES DUESBERG.—Dr. Jules Duesberg has resigned as a member of the faculty of the Johns Hopkins University and has sailed for Belgium to resume work at professor of anatomy at Liège University. Dr. Duesberg went to Baltimore in 1915.

RETURN OF DR. ALEXIS CARREL.—Dr. Alexis Carrel has returned from his service in a field hospital in the Montdidier section to resume his work at the Rockefeller Institute for Medical Research.

RETURN OF BRIGADIER-GENERAL JOHN M. FINNEY.—Brigadier-General John M. Finney of Baltimore has returned to the United States. He sailed for France 19 months ago as head of the Johns Hopkins Base Hospital Unit, and acted as chief consulting surgeon of the American Expeditionary Forces.

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE.—The School of Medicine of the Western Reserve University has voted to admit women next year.

UNIVERSITY OF PENNSYLVANIA.—The hospital of the University of Pennsylvania has decided to admit women physicians, who will act as interns. Two women students who will graduate from the medical department in June have been chosen by the managers of the hospital for hospital duty.

PUBLICATION OF GERMAN WORK ON SHELL SHOCK.—The Controller of Patents of Great Britain has received an application for a license to publish a book on the treatment of shell shock, written by Dr. Kraepelin. The request came from Edinburgh publishers, who wish to publish volume three of this author's work, "Psychiatry." The literature on the subject of mental diseases is not extensive; and as it is believed that this book, although written by an enemy, would be of value in British hospitals, the application has been favorably received by the Controller.

DISTINCTION FOR DR. WILLIAM H. WELCH.—Dr. William H. Welch, of the Johns Hopkins

Medical School, has been awarded the gold medal of the National Institute of Social Sciences.

DISCOVERY OF A NEW ANESTHETIC.—There have appeared recently in the daily press preliminary reports of the discovery of a new local anesthetic. Dr. David I. Macht, of the Pharmacological Department of the Johns Hopkins University, believes that he has discovered in benzyl alcohol or phenmethylol properties which can be used in the production of a local anesthesia forty times less toxic than cocaine. It is reported that while experimenting with benzyl benzoate, Dr. Macht happened to taste a minute particle of the benzyl alcohol and found his tongue completely anaesthetized. There was a slight irritability, followed by a sensation of numbness, coolness, and hardness, similar to the condition caused by cocaine solution. Experiments made with animals seem to have produced satisfactory results. Further information concerning this alleged discovery is awaited by medical journals with interest.

GOLDENROD AND HAY-FEVER.—In commenting upon the advisability of adopting goldenrod as a national flower, a writer in a recent issue of *Science* makes the following remarks:

Stories of the victims of this disease too often get into the funny papers in the same column with mother-in-law jokes—they both deserve to receive more consideration at the hands of the public at large.

Hollopeter* states that hay-fever is largely due to the action of the pollen of the ragweed and of the goldenrod, the former being 85 per cent. guilty, while the latter is responsible for the remaining 15 per cent., not taking account of some few cases probably caused by the pollen of other plants. This seems to reduce the harm done by the goldenrod to a small amount, but it must be remembered that almost all cases are irritated by the pollen of this plant whether or not it is the specific cause of the attack.

Between one and two per cent. of our adult population probably either has hay-fever or is liable to contract it if the proper conditions arise. The efficiency of the victims is reduced during the attack a great deal, in some cases even causing them to be confined to their homes for a month or six weeks every fall. It is true that on this point there is a great variation, but all victims have a lowered vitality. Such a loss of time and efficiency is not only detrimental to the individual, but is also a loss to the community. Why should we aid in the preservation

* Hollopeter, W. C.: "Hay Fever, Its Prevention and Cure," New York, 1916.

and spread of a plant of such propensities, even if it is good to look upon? Rather it should be classed with the ragweed and every effort should be made to stamp it out, at least in the neighborhoods of our cities. If we do not care to eliminate the goldenrod from the national flower contest because of thoughtfulness of our friends and neighbors who suffer from its existence, let us do so merely from the efficiency standpoint, both individual and state.

BRAVERY OF NEW YORK NURSES.—A unit of nurses who entered the service in May, 1917, under the auspices of the Presbyterian Hospital of New York, has returned home. Twenty-two of these nurses, who saw service at Chateau-Thierry, St. Mihiel, and in the Champagne district, part of the time under fire, and who were with the army of occupation in Germany, have received citations from General Pershing for extraordinary bravery. The Presbyterian unit operated the army hospital at Etretat, France, with 2,000 beds, ministering to thousands of American wounded.

PRaise FOR AMERICAN HOSPITALS.—Lieutenant-Colonel Richard C. Cabot, who returned recently from service abroad, has spoken with praise of the American hospitals in France. The unit with which Dr. Cabot served arrived in France four months after the United States entered the war. The American Expeditionary Forces numbered less than 50,000 men when it began to establish Army Base Hospital No. 6 at Bordeaux for the reception of American wounded. It carried on its work of preparation for months before the American Army entered active service, and nothing was lacking in the hospital equipment. In speaking of the excellent character of the service rendered by the hospital, Dr. Cabot is reported to have said:

It was not necessary to wait hours for the attendance of a specialist at a consultation, as is the case sometimes at hospitals on this side. A consultation over a serious case could be called in five minutes. Every sitting at the officers' mess was a potential consultation on the most severe cases in the hospital. Other American hospitals undoubtedly were in position to give service to the American wounded of equal excellence.

We were disappointed when we were assigned to Bordeaux. We thought it was too far from the front. But we are gratified now that we were assigned there. We established a base hospital at the terminal of the lines of communication. When we received patients we had no one to pass them along to—we kept them for the full course of treatment. We did just the thing we

were trained to do and that we had hoped to do.

Some of the worst wounded came to us. The facilities for evacuating the wounded to the rear were excellent. The hospital trains kept us within two days of the front.

When the offensive of July started we began our first real war work. The wounded were coming to us at the rate of 500 every two days. We were rushed night and day—but we were organized and equipped to handle the rush with facility and efficiency.

In the early days, too, when our only patients were the ill from the Army, doctors and nurses were detached for periods of training and experience with the British Medical Corps. Nearly all the doctors had a period of this training.

Other detachments were assigned to aid in the Red Cross work of civilian relief. From November, 1917, to March, 1918, I was in charge of a detachment which travelled up and down France, establishing dispensaries and otherwise ministering to the civilian needs. France had no doctors to care for the ills of its civilian population: all the doctors were with the army on the battle line.

I spent much of my time during this period at the Swiss border supervising the return of French refugees from the occupied portions of France.

The unit treated one-sixth of the American casualties. Beside caring for American soldiers, it accomplished a great amount of work in relief of the civilian population in France, and some of its doctors and nurses will remain in Europe to aid in the after-the-war relief. Lieutenant-Colonel Cabot returned to America in advance of his unit because of his duties as professor at the Harvard Medical School. The unit was relieved on January 14, and is now awaiting transportation home. It will probably be back in the United States within a month. Dr. Cabot is the first doctor of the Massachusetts General Hospital to return to this country.

Col. Frederick A. Washburn, superintendent of the Massachusetts General Hospital, who organized the unit and commanded it during its first months of service, is now in England. He was assigned early last summer to command of all American hospitals there.

Col. Warren L. Babcock of Detroit commanded the hospital at Bordeaux from the time Colonel Washburn left until the return of Lieutenant-Colonel Davis from Italy. Accompanying Colonel Washburn to the duty in England were Maj. James H. Means and Capt. William J. Mixer of the original Massachusetts General Hospital unit.

The doctors of the unit who are going to re-

main in Europe to aid in relief work are: Capt. Paul D. White, Lt. Carl A. Binger, Lt. D. S. Clark, and Lt. J. S. Hodgson. These with nurses and orderlies of the unit are assigned to at least six months' service in the Balkans. They answered a Red Cross call for volunteers.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Saturday noon, February 15, the number of deaths reported was 262 against 332 last year, with a rate of 17.16 against 22.07 last year. There were 39 deaths under one year of age against 45 last year.

The number of cases of principal reportable diseases were: Diphtheria, 52; scarlet fever, 53; measles, 8; whooping cough, 14; typhoid fever, 5; tuberculosis, 40.

Included in the above were the following cases of non-residents: Diphtheria, 11; scarlet fever 4; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 1; whooping cough 1; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 1; scarlet fever 1; tuberculosis, 2.

Influenza cases, 316. Influenza deaths 36, of which 4 were non-residents.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—On February 14, 40 new cases of influenza, with 2 deaths, and 7 new cases of pneumonia, with 4 deaths, were reported to the Boston Health Department.

On February 15, 40 cases of influenza and 9 of pneumonia were reported to the Boston Health Department. Deaths reported numbered 6 of influenza and 2 of pneumonia.

In speaking of the week ending February 15, Acting Health Commissioner Safford is reported to have said:

"In spite of the continuance of influenza as the cause of mortality in Boston, the total deaths for the present week will again fall considerably below last year. A week ago, for the first time since last September, deaths for the week were below those for 1918."

On February 16, 30 cases of influenza and 6 of pneumonia, with 5 deaths from influenza and 11 from pneumonia, were reported to the Boston Health Department. On February 17, there were reported 40 new influenza cases, with 3 deaths, and 7 cases of pneumonia, with 6 deaths.

APPOINTMENT OF DR. W. R. BLOOR.—Dr. W. R. Bloor has been appointed professor of biochemistry and head of the division of biochemistry and pharmacology at the University of California. Dr. Bloor was formerly assistant professor of biological chemistry at the Harvard Medical School.

APPOINTMENT OF LOWELL BACTERIOLOGIST.—Dr. James Y. Rodger will succeed Dr. Marshall L. Ailing as bacteriologist in Lowell. Dr. Rodger has returned recently from France, where he was a lieutenant in the Medical Corps of the 26th Division.

APPOINTMENT OF DR. WALTER C. BAILEY TO THE MISSION TO POLAND.—Dr. Walter C. Bailey of Boston has been appointed at the head of the Red Cross Commission to Poland. Dr. Bailey graduated from the Harvard Medical School in 1898. For three years he was chairman of the board of trustees of the Massachusetts Consumptives' Hospital. At the outbreak of the war he went to Washington and became actively engaged in Red Cross Work, and later went abroad as a member of the Rockefeller Tuberculosis Commission. He established tuberculosis dispensaries at Lyons, France, and worked with Dr. Livingston Farrand. Dr. Bailey was later appointed chief of the medical department of the Rhone.

HONOR FOR PROFESSOR SELSKAR GUNN.—Professor Selskar Gunn of the Massachusetts Institute of Technology has been awarded the cross of Chevalier of the Legion of Honor for his extraordinary services in the fight against tuberculosis in France. The award was made by President Poincare of the French Republic upon the recommendation of André Tardieu. Formerly Dr. Gunn was professor of biology at the Institute of Technology. He is now in France as director of the campaign against tuberculosis which is being carried on in France by the Rockefeller Institute.

FELLOWSHIP FOR PUBLIC HEALTH MEN.—The Harvard Medical School, in coöperation with the Boston Dispensary, offers a Fellowship to graduates in medicine who desire to pursue a course of study leading to the Certificate of Public Health in the School for Health Officers, or to the degree of Doctor of Public Health in the Department of Preventive Medicine and Hygiene.

Fellows are required to give about half their time to the treatment and supervision of the sick in clinics or their homes for the Boston Dispensary and half their time to study or research at the Harvard Medical School. Appointments made be made for one or two years. The stipend is from \$750 to \$1,000 per year, depending on the details of the arrangement made.

Applications stating previous experience, references, etc., should be made to Dr. Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard Medical School, Boston, Mass., or to Michael M. Davis, Jr., Director of Dispensary, 25 Bennet Street, Boston.

The Massachusetts Medical Society.

ANTI-VACCINATION.

The Massachusetts Medical Society,
Office of the President, Worcester,
February 26, 1919.

Mr. Editor—

The annual attempt to repeal our vaccination laws produces this year the inclosed circular now being sent to members of the Legislature and more or less to physicians and others throughout the State.

I ask you to make it even more public by printing it in your columns and I ask everyone who reads it to read carefully also the statement of the true conditions at the Massachusetts State Antitoxin and Vaccination Laboratory and, after reading it, to "get busy," each in his own district, to see members of the Legislature and refute the statements based on the testimony of the ex-soldier who "became tubercular as a result of vaccination." The careless lay reader might easily conclude that "corpses" of persons dying from smallpox were daily used to inoculate calves, and from the last two paragraphs, that the "slime" was directly injected into the "healthy bodies of public school children." I venture to assert that if the conclusions were drawn, it would not be altogether disagreeable to the "Medical Liberty League."

SAMUEL B. WOODWARD, President,
Massachusetts Medical Society.

HOW STATE VIRUS IS MADE IN AT LEAST ONE OF OUR STATE LABORATORIES.

Described by an eye witness* in the year nineteen hundred and eighteen.

The calf is supplied to the laboratory by a meat dealer. It is first taken from the stable and given a wash.

The day the creature is to be used for making virus, it is strapped to a table. The head is bound securely down; the front legs are fastened together. The hind legs are separated as far as possible, and held firmly. In order to make the area worked on as large and as free as possible. The calf is then shaved between the front and hind legs, an area about two feet long. About ten or twelve slits are made in the shaved surface, into these slits the vaccine virus seed† is rubbed, to remain six or seven days.

It is plain to be seen that the animal suffers. It is operated on without anaesthetic. It groans and wheezes, showing its terror by its rolling eyes, panting breath, and quivering flesh.

This is vivisection!

For six or seven days after the calf is thus inoculated, it is suspended so that it can touch its feet, but cannot lie down; this suspension is to guard against infection;—infection of an already infected calf! Lice crawl over the sores.

After the six or seven days, the calf is again strapped securely to the table; the *swollen, inflamed slits* are scraped with a sharp knife, and the filthy contents is put quickly into a bottle and promptly covered—to keep it pure! Later it is ground up in glycerine, and heated to a certain temperature. The students who came to the laboratory for instruction in making virus were told that all the germs could not be killed, but as many were killed as possible. The virus is then cooled to a temperature below freezing, to remain until ready for use.

Virus, according to the Century Dictionary, means: "a morbid poison," "slime or poison." When you come to think of this slime from the corpse of a person dying of small pox, can we go further in filth?

The introduction of this "slime or poison" into the healthy bodies of public school children is compulsory in Massachusetts.

Will you help to repeal this law?

JOIN THE MEDICAL LIBERTY LEAGUE, Inc. NOW! Room 205 Kimball Building, 18 Tremont St., Boston, Mass. Annual Associate Membership \$1.00. Telephone Main 2394.

* I may interest the reader to know that the "eye witness" is an ex-soldier, who served at the Mexican Border, in the Coast Artillery, and was afterward at Camp Devens, and who has suffered the ruin of his health from inoculation and vaccination and has been discharged as tubercular.

† Dr. S. Monckton Copeman (Victoria University, Manchester, Eng.) speaking of seed virus, says: "The most satisfactory material was found to be vesicle pulp, obtained in the post mortem room from cases of discreet smallpox that had died during a comparatively early stage of the eruption."

HOW VACCINE VIRUS IS PREPARED IN OUR STATE LABORATORY. STATEMENT OF DR. A. N. ALLEN, ASSISTANT DIRECTOR.

The calf to be used for propagation of vaccine virus is kept in quarantine for at least one week before it is vaccinated, to insure its being in perfect health. A tuberculin test is made at this time on every calf to rule out bovine tuberculosis.

Tuberculin Test.—On first day, the temperature of calf is taken in the forenoon, at noon, and in the afternoon. At 10 P.M. 1 c.c. of tuberculin (from Bureau of Animal Industry, Washington, D. C.) is injected subcutaneously.

On the second day, temperatures are taken every two hours from 8 A.M. to 6 P.M. A marked elevation of temperature (103 or higher) is a positive test. A calf showing a positive reaction is not used for vaccination.

If the calf is healthy, it is washed with soap, water and brushes, and long hair, which could hold dirt, is clipped off. This is done a day or two before vaccination. Then the calf is brought into a clean stall in a clean stable where it is kept as clean as possible during the entire period, until vaccine pulp is collected. The calf is now fed on sterilized hay and milk to keep alimentary canal as clean as possible. The calf is prevented from lying down during development of vaccine eruption (5 or 6 days) by means of a canvas sling (sterilized). A sterile cloth apron is placed over the vaccinated area as additional protection against soiling. The forenoon and afternoon temperature record of each calf is kept throughout the period of observation. This is a means of watching the health of the animal.

Process of vaccination.—Before operation, the calf's feet are washed with sulpho-naphol, carefully inspected, and sterile stockings placed on hind feet. The calf is placed on a special operating table and rules of surgical asepsis are observed throughout operation. Skin of abdomen and inside thighs is shaved.

This area is then cleansed with utmost care and thoroughness by sterile water, sterile castile soap solution, sterile brushes, then thorough irrigation with sterile water. The area is then dried with a towel and followed by 70% alcohol. This procedure is repeated three times.

For vaccination, longitudinal superficial scratches are made on the shaved area, about 1 cm. apart, and seed vaccine is applied to each scratch as it is made. When the operation is finished, the calf is placed in a sling in the stable, as before stated. When the eruption has developed (5 or 6 days) it is removed on the operating table with a curette.

Vaccine eruption appears as elevated ridges of whitish vesicular tissue along the original scratches. There is no marked reddening of skin and no swelling.

The curetting is done under rules of surgical asepsis. The entire field is cleansed three times, as previously described, excepting that alcohol is not used, as this might injure the vaccine. Sterile towels are placed about area. The calf is then chloroformed during process of curetting. The pulp is transferred to a sterile glass dish and immediately placed in a freezer to prevent multiplication of bacteria.

The calf is *never chloroformed to death* at time of taking off the vaccine.

On the following day the calf is autopsied to make a final assurance of its normal condition. If any pathological conditions are present at autopsy, the vaccine is discarded. The vaccine is used if no pathological lesions are found.

The pulp is further treated by mixing it with 50% sterile glycerine (pulp 1 part, glycerine 4 parts) and it is then ground in a sterile glass grinder. The finished product is a fine suspension of vaccine pulp in glycerine. This is stored for several months in a freezer, before distributing. During this time the extraneous bacteria are slowly eliminated by the glycerine. Meanwhile its purity is tested by two sets of seven bacteriologic tests—one set of tests by Dr. Rosenau; the second set by Dr. Reagh. These two sets serve as checks on each other. Potency tests are also made on each lot.

Tests made on vaccine.—(1) Agar plate culture is made with a known dilution of vaccine and the number per c.c. of bacteria in vaccine is calculated.

(2) One-fourth cubic centimeter of vaccine is injected subcutaneously in a guinea-pig. The animal is observed for a month. This test is for any pathogenic organism.

(3) One-fourth cubic centimeter of vaccine is added to sterile whole milk. This is a test for the gas bacillus.

(4) One-fourth cubic centimeter is added to a fermentation tube of unfermented bouillon containing sterile guinea-pig tissue (kidney).

(5) One-fourth cubic centimeter of vaccine is added to a fermentation tube of dextrose bouillon (1% dextrose).

(6) One-fourth cubic centimeter is added to a fermentation tube of dextrose bouillon. This is heated to 60° to 65° C. for one hour. All bacteria, excepting spore-bearers, are killed by heating.

(7) One-fourth cubic centimeter is added to a fermentation tube of unfermented bouillon.

In tests 4 to 7, after 9 days incubation, $\frac{1}{4}$ c.c. of fluid from the fermentation tube is injected subcutaneously into a mouse and the animal observed for a month. These tests (4-7) are made especially for tetanus.

After tests are complete and satisfactory the vaccine virus is further diluted for use, filled into sterile glass capillary tubes by vacuum, the tubes sealed by flame, packed in sterile glass containers and distributed in mailing cases.

"Cow-pox virus is the virus used in vaccinating the calves for production of small-pox vaccine."—Dr. Arthur Reagh. ARNOLD N. ALLEN, Asst. Director, Massachusetts State Antitoxin and Vaccine Laboratory.

SOCIETY NOTICE.

MASSACHUSETTS THERAPEUTIC MASSAGE ASSOCIATION.

—The next meeting will be held at the Hotel Brunswick, at 8 P.M., Tuesday, March 11, 1919. Business meeting at 7.45 P.M.

DR. ANDREW P. CORNWALL, orthopedic surgeon, Massachusetts General Hospital, will address the Society on "Lame Backs: Their Diagnosis and Treatment."

Members of the medical profession are invited.

DOUGLAS GRAHAM, *President.*

MISS AGNES J. KERR, *Secretary.*

RECENT DEATHS.

EDWARD FRANCIS PHELAN, M.D., a Fellow of the Massachusetts Medical Society, died of disease in France, while in service as Captain M.R.C., U.S.A., December 9, 1918, aged 32. His home was in North Brookfield. He was a graduate of the University of Vermont in 1909 and joined the Massachusetts Medical Society in 1912.

LEWIS HENRY PLIMPTON, M.D., of Norwood, died in Boston suddenly, February 21, 1919, aged 66 years. He was a native of Walpole and was educated at Phillips Exeter, Harvard College in the class of 1875, and graduated from Harvard Medical School in 1878. He was an interne at Boston City Hospital and had practiced in Norwood until 1910. He had been a member of the Massachusetts Medical Society since 1879. He is survived by his widow, who was Alice H. Morrell.

DR. GEORGE R. CADE, of Brighton, Massachusetts, died recently at the age of fifty-two as a result of an accident. Dr. Cade was born in Northwood, N. H., and received his degree from Bates College. For twenty years he had practiced medicine in Maine and in Haverhill, Massachusetts. At the time of his death he was medical director of the Fisk Hospital, Brighton.

DR. SANTOS MOREIRA, a pediatricist of Rio de Janeiro, and director of the *Medicina Clinica*, and DR. PAULO SILVA ARAUGO, a leading microbiologist, who published, in 1915, "Vaccine Therapy of Bronchial Asthma," died recently, in Brazil, of influenza.

DR. RICHARD ERNEST KUNZE died at Phoenix, Ariz., on February 10. He was born in Saxony. He practiced medicine in New York until he went to Arizona in 1896. There he established a cactus farm and studied medical botany and insect fauna of Arizona, and became an extensive exporter of cacti to the botanical gardens of the world. At one time Dr. Kunze was president of the New York Therapeutical Association.

CLINICAL CHART OF RENAL DISEASES.—The Clinical Chart of Renal Diseases accompanying the article by Dr. H. S. Jellalian, published in the issue of the JOURNAL for Jan. 2, 1919, has been reprinted in convenient form for the use of physicians and medical students, and may be had at the JOURNAL office for twenty-five cents a copy.

BACK NUMBERS WANTED.—The JOURNAL will be very glad to purchase the following numbers if in good condition for binding: June 20, 1916; February 1, 1917; May 3, 1917; June 28, 1917; November 1, 1917; November 8, 1917.

The Boston Medical and Surgical Journal

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Original Articles.

SURGERY IN CANCER: A CRITICAL STUDY.

BY SEELYE W. LITTLE, M.D., ROCHESTER, N. Y.

As a preliminary to this study it is essential that certain things be understood.

The term "Surgery" in the title includes all methods designed to cure cancer by the destruction or removal of the pathological new growth as well as all methods designed to prevent cancer by the destruction or removal of the so-called "pre-cancerous" lesions. In both classes, curative and prophylactic, the knife, of course, is overwhelmingly the commonest instrument used, though for the purposes of this argument I include under the titular head of "Surgery" the use of such instruments as x-ray, radium, caustics and the like.

The term "Cancer" in this essay, unless otherwise specified, includes not only the pathological new growth called cancer in the older classification,—perverted epithelial cell growth,—but all malignant pathological new growths. Here, again, however, just as the knife leads in the list of instruments of surgery, so cancer, in the older, more restricted sense, is numerically far ahead of all other malignant pathological new

growths; even sarcoma of the old classification is a poor second.

So that practically the argument really concerns knife surgery, and cancer in the sense of that term say twenty years ago.

Unless otherwise stated, the figures are derived from Hoffman's work, "The Mortality from Cancer throughout the World" (1915), in which the official sources of his information are stated; or from the monumental publication of the United States Census Bureau, "The Mortality from Cancer and other Malignant Tumors in the Registration Area of the United States" (1916).

It should be stated that the argument in this essay and the conclusions from that argument are unlooked for by-products, so to speak, of a much wider and more fundamental investigation carried on during the past ten years, and are neither the result nor the object of a pre-determined investigation limited to "Surgery in Cancer" alone. Much less was the result of the argument herein set forth foreseen or even thought of beforehand, though it might have been absolutely predicted in the light of other phases of the wider investigation just mentioned.

Finally, if there is no flaw in the argument which is based solely upon accepted facts and upon the largest and most reliable cancer figures which we have,—if there is no flaw in the

argument, the conclusion, disconcerting though it may be, must be accepted and faced.

The claim that the disease called cancer may be cured by the complete removal or destruction of the pathological new growth which gives the disease its name and which is the one known invariable thing without which the disease does not exist, predicates that the disease, cancer, and the pathological new growth, the "cancer," are identical. If they are not identical and if the claim is justified, it follows either that here is one disease which may be cured by the complete destruction or removal of its one known invariable symptom or manifestation; or that, while a cancer does not constitute the disease cancer, yet it alone contains the essential germ, or poison, or thing, that makes the disease possible, and that, therefore, the removal of a cancer cures cancer.

It is childish nonsense, not to say homeopathy, to claim that any disease may be cured by removing any one or all of its symptoms in any other way than by the removal of the disease itself.

Is a cancer identical with the disease cancer? Or does a cancer alone contain the essential thing without which the disease cancer is impossible? If neither of these two alternatives is true it follows that destruction or removal of a cancer *per se* never has, nor ever will, cure the disease cancer, and it also follows that one has no justification in claiming that complete removal or destruction of a cancer, or of any number of cancers, may cure the disease cancer. The acknowledged fact that many individuals, after having had their cancers removed or destroyed, have lived for years after that event, and, meanwhile innocent of a cancer, have finally died from some disease other than cancer, is a mere *post hoc, propter hoc* argument. Those who, nevertheless, accept it as a valid argument are forced to the assumption that "all the cancerous tissue was not removed" in the tragically numerous cases in which that assumption must be made to uphold the logic.

Is a cancer identical with the disease cancer? Does a cancer alone contain the essential thing without which the disease cancer is impossible? If the second question can be negated the first of necessity is also negated. Let us then consider the second question.

The essential thing, *i.e.* the cause, without which the disease cancer is impossible, is un-

known. But that essential, whatever it may be, must conform to certain known facts, some positive in nature and some negative, though none the less binding.

The cause of cancer must exist everywhere in the inhabited world, because cancer is endemic everywhere in the inhabited world. It must be capable of being effective at all ages, in both sexes and in every race, color, status of civilization and in every walk of life. It must be a cause that has persisted for hundreds of years, certainly since the time of Hippocrates, Celsus, and Galen. (Hoffman, Woglom, Crocker Research Laboratory Reports, etc.) This fact alone rules out as the essential cause anything, any condition, any article of human intake, any circumstance that has not existed continuously and in every region of the earth having a record of cancer from before the Christian era to the present time. Furthermore, it must be a cause which is becoming increasingly able to produce its result, but not among all peoples alike, nor everywhere alike. It must be such a cause as will explain the very remarkable variations in the rate of incidence and in the choice of site under each of these heads. For instance, it must explain why it is so effective a cause at and after middle life, so rarely effective in infancy, so increasingly effective among the highly civilized peoples, and so rarely effective comparatively among savages and semi-civilized peoples; why it produces its effects much more often in whites than in negroes, why women are more susceptible, in general, than men, and yet why men have cancer of the skin, for example, oftener than women. It must account for the remarkable incidence of cancer at the site of chronic injury or irritation, but not in young people at such sites very often nor in most people at any site; for the relative frequency of cancer in particular regions of the body and the rarity of cancer in other regions. It must be a cause which, once effective, practically never lets up but becomes increasingly effective until the death of the individual affected. It must be a cause not transmissible by any known means from one individual to another, either before or after the death of the individual affected. It must be a cause not coming from outside the affected individual unless we grant also some inherent cause in such an individual to render the extraneous cause effective. That is, if the cause is an extraneous one, and there is no essential inherent cause, we must assume that

all affected individuals are what we call, in the case of bacterial diseases, susceptible; while all others, which means all other people on earth, are not susceptible; and we must further assume that, contrary to susceptibility in all other known disorders produced by extraneous causes, such susceptibility increases in a truly remarkable way at and after middle life. Aside from mechanical injuries, the only known ways whereby an extraneous cause produces pathological effects in humans are by way of the alimentary canal, by breathing apparatus, and by introduction through the body surface. If the cause of cancer, then, is an extraneous cause it must be a cause capable of exerting its effects elsewhere than where it gained entrance; in other words, a cause diffusible throughout the body, that is, a cause carried by the circulatory apparatus. If such is the case it is impossible to explain in any way how or why an extraneous cause, increasingly effective and permanent, circulating in the blood, never has been known to produce its effect in another individual by being introduced into his blood, as must have happened literally thousands of times in the case of surgeons, nurses and attendants. Furthermore, cancer is usually single and that is still more difficult to explain on this basis. So for many reasons we are forced to the conclusion that the cause of cancer must be an intrinsic cause in the individuals affected and not primarily or fundamentally a cause introduced from the outside.

The cause of cancer must be something capable of explaining the presence in an affected individual of embryonic cells in a place where no such cells normally exist and it must explain why these embryonic cells persist in remaining embryonic cells to the end of the chapter; why they thrive and multiply indefinitely at the expense of the normal cells about them and throughout the body, and why they are always embryonic cells of the same type as the embryonic ancestral cells of the normal cells among which they first appeared.

The cause of cancer must explain certain definite though little understood changes in the metabolism of lime and sugar that are known frequently to occur in individuals having cancer. It must explain the remarkable incidence, great or small as the case may be, of cancer relative to the incidence of certain other diseases, notably diabetes mellitus. It must be compatible with our inability to transplant suc-

cessfully living cancer cells to another individual in spite of the fact that normal cells may often be transplanted successfully. Finally, it must explain metastases, and recurrences at any time after removal of the original growth; why in one case a metastasis occurs within one month, in another case after three years, and in another case never; why recurrences exhibit the same peculiar time relations.

In view of all this and of other facts that will readily occur to the student of cancer, it is obvious that a cancer is neither the disease cancer nor does it contain the cause of the disease permanently, if indeed it ever does.

Therefore one is never justified in claiming that removal or destruction *in toto* of a cancer will, or even may, cure the disease cancer. It *may not*, as we admit; it cannot, as we shall admit one day. Indeed, we tacitly and ostrich-foolishly admit now that removal of a cancer never cures cancer. We *call* it a cure if the patient survives cancerless for five years. (It used to be three years). If a cancer appears before that time we admit that the operation did not effect a cure; if a cancer appears a day after the five years are up we *call* it a brand new cancer having no connection with the former cancer because that cancer was "cured"! There is no time limit to a cure. If cancer, or any other disease, is cured it stays cured so far as that instance is concerned. If cancer or any other disease appears again after a cure it is simply a fresh attack of that disease whether it occurs ten days or ten years after the original attack. Also, it is well to remember that a disease may exist after an apparent "cure" without ever giving any clinical evidence of its continued existence. Syphilis, for example.

So much for logic. Now let us apply the newer, more fashionable pragmatic test. If removal or destruction of a cancer actually does cure the disease cancer, or if removal or destruction of precancerous lesions does actually prevent cancer,—so much the worse for logic. One can afford in that case to allow logic to go to a place where coal is a drug on the market.

It is an indisputable fact that in all civilized countries the death rate from cancer is, and has been for years, steadily increasing. It is also an indisputable fact that in all civilized countries medical men in general have urged and have practiced more and more the complete and early removal of all cancers and of all abnormalities that experience shows might subsequently become

sites for cancers; at least where such removal is practicable. This teaching and this practice have been increasingly followed out not only in private by medical men everywhere but publicly and officially by medical societies, cancer research associations, and health departments. The civilized public has been widely lectured and circularized upon the subject. That this teaching has had some effect is shown by reports from various sources, such as Johns Hopkins and the Mayo Clinic, that people suffering from cancers are actually presenting themselves for treatment sooner after the beginning of the disease than they formerly did.

We have, then, to face the fact that deaths from cancer, relatively to population, are increasing at the same time that surgical removal of cancers is increasing, and earlier surgical removal at that.

This does not at all necessarily mean that the increasing cancer death rate is due to the increasing surgical treatment of cancer, though, as a possibility even, such a thought is a horrible nightmare. It does mean, however, that our increasing surgical assiduity with reference to cancer is not resulting in a decrease in the death rate from cancer. If surgery can bring about that desirable result it is more surgery we need, not less. Can it conceivably produce such a result? Never, if the logic already presented is correct. But, logic or no logic, does surgery actually result in a lesser cancer death rate than would confront us if surgery were abolished as treatment for cancer? Disregarding argument, that question could be answered only by trial extending over several years and among a large population. It would be the height of foolhardiness to make such a trial in the present state of our knowledge, because we know that cancer surgery sometimes, though all too rarely, is followed by clinical freedom from cancer for years or even for the balance of a long life; and because we also know that, without surgery, the average cancer victim is doomed to die within two years. On the other hand, many a patient with a cancer and without surgery lives with that cancer for years, or even to the end of a long life, with no evidence of the disease cancer other than a cancer. Reference is made, of course, to many cancers of the breast in old women and to certain cancers of the skin. Also there are a few cases, apparently authentic, of cancers which have disappeared spontaneously. Finally, we have no way of telling whether or

how often surgical removal of a supposed cancer which turned out not to be cancer may be followed by the appearance at the site of operation of a real cancer, as a direct result of the surgical interference. Such an event does happen whether or not due to the surgery. It is soothing to the surgeon who has such an experience to know that cancer rarely occurs at the site of any operation save only the site of a former operation for the removal of a real cancer!

Does the surgical treatment of cancer on the whole, taking all cases as they come, offer a longer lease of life to cancer patients than they could expect without surgery? Here we have a partial answer to one side of the question. We have a little information as to how long a few individuals have lived with cancers and without surgery. We have also some data as to how long a considerable number of cancer patients lived after it was known that they had cancer, but how many of these had the advantage of surgery and how many had not is not stated. We know from records by the older observers, of the time before there was much operating for cancer, how long these patients generally lived after the growth was noticed and with no attempt at removal. In the American Text-book of Surgery (1893), it is stated, for example, that without operation the average duration of life in the fibrous form of cancer of the breast is about thirty months, in the soft form about twelve months. Whatever may have been the truth at that time this average duration is far too short at the present time. The history records of any present day observer will prove it in the comparatively few cases observed by any one man. For example, in the *Boston Medical and Surgical Journal*, Nov. 21, 1918, Dr. C. C. Simmons reports that in 150 cases of cancer of the breast the average length of time the patients had noticed symptoms before consulting a medical man was 12.5 months. After a lapse of time averaging 3.5 months more 129 of these patients were advised to undergo operation. After an average period of 1.3 months more than 121 of these patients actually had their operations. In all, a period averaging 17.3 months duration of the disease and still operable! Surely if they were still operable they had an expectation of several months life without operation. And according to the older estimate practically every one of the 150 cases must have been of the scirrhus variety because the

"soft" kind live on the average only "about 12 months." Without doubt these 150 cases included the usual proportion of "soft" cancers.

The point to be emphasized is this: From the exact data just quoted and from other scattered data bearing on the subject, it is fairly within the truth to say that, without surgical interference and having reference to all cancer patients, the average length of life is at least two years from the time the patient first notices symptoms of the disease. This is admittedly an estimate from the very scant data available, but it is certainly not too far from the truth.

The New York State Institute for the Study of Malignant Disease, 1913 (quoted by Hoffman), reports that among 2380 patients dying from cancer the average duration of the disease from beginning of noticeable symptoms to death was, for males, 22 months, and for females, 26 months. As these cases include indiscriminately both the surgically treated cases and all others, though in what proportions is not stated, it is plain enough that surgery did not make much of an impression in this instance on lengthening the average life of cancer patients. Nor did surgery in New York State, either by "cures" or by lengthening the average duration of life of cancer patients have any effect upon the steady and almost uniform yearly increase in the cancer death rate. The death rate increased from 66.7 per 100,000 population in 1900 to 87.8 in 1913. Indeed the record is worse for the last six years of this period than for the first six years. The increase from 1900 to 1906 was 8.9, and from 1907 to 1913 the increase was 10.1 per 100,000 population. One would expect the contrary if the "operate early and thoroughly" teaching and practice of the past dozen years is sound. Such teaching and practice undoubtedly have prolonged the lives of a considerable number of cancer patients and have a comparatively few clinical "cures" to their credit. But this is the pragmatic part of the argument, concerned with the actual working of the plan. Let us grant, for the sake of making it as favorable as possible for the pragmatic side, that if every operable cancer could be operated upon within say three months of its discovery, there would be a far greater number of "cures." Not only may this be granted, but it is without doubt the truth. There is another side to the picture, however. In the first place, the more cancer operations, early or late, the more operative deaths, thereby counterbalancing more or less the

"cures." The more cancer operations, the more recurrences and therefore the further increase of both operable and of inoperable cancers if not of the disease cancer. By the way, more than one half of the cancers of the breast included in the report of Dr. Simmons were *inoperable postoperative recurrences*. He also notes that "many" of these patients with inoperable recurrences had evidently been given the benefit of the "complete" operation. Of 80 cases operated upon, because deemed operable, 21 died within one year; 41 died within two years; 60 died within three years; 9 were still alive with recurrences; the average duration of life after operation was 31.7 months. This is not a remarkably encouraging record, particularly when one remembers that all the cases were treated at the Huntington Hospital in Boston, Massachusetts,—a state and a city and a hospital noted for leadership in such matters. Pragmatically and as a matter of hard fact, a very minute minority of cancer cases can possibly have such advantages. Bearing this in mind let us consult the cancer mortality records of Boston, of Massachusetts, and of the registration area of the United States as a whole. And let us ponder.

Rate per 100,000 population.

	1901	1913
Boston	80.1	117.5
Massachusetts	73.1	99.4
U. S. Registration Area.....	64.3	78.9

It might be urged that these figures state the case unfairly because there are more people of cancer age in New England in general than in the rest of the country in general, and therefore there would naturally be a far higher cancer incidence; and a far higher cancer death rate. That point deserves consideration. Unfortunately there are no figures available for analysis with reference to that particular point and with reference to the particular regions covered by the foregoing table. But some light may be found elsewhere.

New York City considers itself and is considered generally, (save possibly by the natives of Boston), a progressive and active medical and surgical center. Rochester, N. Y., is certainly as far removed from being an active, progressive, and scientific medical and surgical center as could well be imagined. As an instance proving this statement, the largest and best equipped hospital in Rochester, N. Y., has not furnished

an average of 10 autopsies a year for certainly 20 years!

In 1910, New York's cancer death rate at age 35 and over per 100,000 population of age 35 and over was 245. Rochester's rate on the same basis was 169. Of Rochester's population in 1910 no less than 55% was at age 35 or over; of New York's population less than 31% was at age 35 or over (U. S. Census). Theoretically Rochester should have had relatively a far greater cancer incidence and a far greater cancer death rate, taking the *entire* population in each case as the basis of comparison. Theory and fact agree in this respect.

Cancer death rate per 100,000 *total* population in 1910:

Rochester	95.8
New York	77.8

But taking into account only the population, in each case, of *cancer age*, surgically unprogressive Rochester is immeasurably ahead of surgically progressive New York as just shown.

New York City cancer "progress" may be compared with Rochester's lack of the same in another and perhaps still more disconcerting way.

Cancer death rate per 100,000 *total* population:

	1901	1911
Rochester, N. Y.	92.5	91.8
New York	69.0	79.0

During these ten years Rochester's rate has been fairly steady, averaging around 90.0, rather a high rate except when one recalls that 55% of the population is of cancer age. New York's rate during the same ten years has steadily and uniformly increased. Moreover, New York's cancer death rate, though apparently lower than the average, is actually very high considering that only about 30% of the population is of cancer age.

In view of these figures, Boston's very high and *increasing* cancer death rate can scarcely be explained away on the ground that Boston has an unusually large population of cancer age. Nor can New York's low cancer death rate be explained on the operate-early-and-often plan of cancer treatment. Particularly difficult is it to explain on that basis New York's *increasing* cancer death rate: and it is impossible on that basis to explain New York's tremendously high actual cancer death rate and its persistently increasing highness. Or (that nightmare again) is New

York's cancer death record perfectly explainable?

And what is one to say about Rochester's actually rather low cancer death rate (considering the proportion of the population at cancer age), and particularly about the fairly stationary death rate during those ten years? Neither in those years nor at any other time has Rochester followed out the universal injunction to "operate early and thoroughly" in cancer. This is not because Rochester physicians do not approve of that dictum, but because they have not in general the scientific medical acumen and attention to detail needed to make an early diagnosis of cancer; and because very few Rochester surgeons have the training and skill to do any complete operation in a first class manner. Nor is this state of things peculiar to Rochester, N. Y. It exists all over the country except in the great medical centers such as the other Rochester, Boston, Philadelphia, Baltimore, and possibly a few other places. This pragmatic fact cannot be denied. Nor can the other pragmatic fact, explain it as we may, that the cancer death rate is higher and increasing faster in the great medical centers of this country than in the comparatively unprogressive medical centers. That, of course, is not true of diseases other than cancer which are curable or remediable only by painstaking and scientific methods of diagnosis and treatment.

From another angle, surgery as a treatment for cancer is put upon the defensive by the pragmatic test. In what class of cancer ought one to expect that the earliest diagnosis could be made and consequently early operation would be most common? In what class of cancer is operation technically the least difficult? What class of cancer offers on the whole the best chance of success from operative measures? What class of cancer is from beginning to end directly under view? Cancer of the skin answers all these questions quite satisfactorily. What class of cancer theoretically can be best prevented by the surgical prophylactic measure of removing "precancerous" lesions? Again, cancer of the skin. What class of cancer is most liable to be quickly noticed by the patient and concerning what class of cancer will a patient consult a physician soon after he discovers it? Cancer of the skin, because it is usually disagreeably conspicuous on face or hand.

Such being the case, cancer of the skin ought surely to demonstrate, if demonstration is any-

where possible, the beneficent result (a gradually decreasing death rate), of curative and prophylactic surgery as applied to cancer. Cancer of the breast would also answer the above questions satisfactorily and serve equally well as a demonstration except for the fact that American ladies have a praiseworthy disinclination to exhibit their breasts except in the privacy of the ball room. Even with that handicap, cancer of the breast probably is second only to cancer of the skin in its liability to early discovery, its coming early under the observation of the physician, its early diagnosis, its comparatively safe operability, and in the opportunities the female breast presents for the removal of "precancerous" lesions. Let us examine the cancer death rates of cancer of the skin and of cancer of the breast for proof that surgery is justified in the treatment and prophylaxis of cancer.

For the sake of comparison let us take also the figures showing the death rates from all cancers as a sort of standard; and from cancer of the stomach and liver as an example of a cancer comparatively difficult of early diagnosis, and rarely discovered in time for reasonably hopeful operability, of difficult operability at the best, and a cancer offering the slightest opportunities for surgical prophylactic work to any save the most painstaking and accurate diagnosticians and surgeons.

CANCER DEATH RATE PER 100,000 POPULATION IN THE U. S. REGISTRATION AREA, 1900-1914.

	ALL CANCERS.	SKIN.	FEM. BREAST.	STOM. AND LIV.
1900	62.9	2.0	9.1	22.5
1901	64.3	2.2	10.4	22.6
1902	65.1	2.1	10.9	23.4
1903	68.3	2.3	11.0	25.1
1904	70.2	2.3	12.2	26.2
1905	71.4	2.4	11.5	26.2
1906	69.1	2.3	11.7	26.1
1907	70.9	2.6	12.3	27.0
1908	71.5	2.7	13.2	27.9
1909	73.8	2.9	14.4	29.3
1910	76.2	2.7	14.2	30.6
1911	74.3	2.7	14.5	29.3
1912	77.0	2.9	14.9	30.6
1913	78.9	2.7	14.7	31.2
1914	79.4	2.9	16.6	30.1

It will be seen that under each of the four headings in the table there has been on the whole a steady increase in the death rate from 1900 to 1914. The important thing, however, for the present discussion is the percentage increase under each head.

Deaths from cancer in general increased...26%
 Deaths from cancer of stomach and liver...33%
 Deaths from cancer of the skin.....45%
 Deaths from cancer of female breast.....82%

Comment is superfluous. The appeal to pragmatism not only confirms the appeal to reason but it arouses again the horrible suspicion that the surgical treatment and prophylaxis of cancer, instead of curing and preventing cancer, actually and enormously increases the death rate from cancer and the incidence of cancer. It is not fair to make that *post hoc, propter hoc* assumption, however. There may be some other explanation for the undoubted facts set forth above. But that other explanation, if it exists, should be made very clear before one is justified in advising the surgical removal at the earliest possible moment of every operable cancer, of every "suspicious" growth, and of every possible "precancerous" lesion.

Meanwhile, what is the honest, conscientious, informed physician to do when asked for professional advice by a patient with a cancer, a possible cancer, or a possible "precancerous" lesion, assuming in each case that the abnormality is obviously operable?

Taking his honesty, his conscience, and his information with him, the physician should put himself in the patient's place, bearing in mind the patient's sex, age, race, financial and domestic condition, family history, physical condition, mental status, previous history, habits, occupation, and general environment. He should then advise the patient to do exactly what he would decide to have done to himself under all the circumstances, *including* the surgeon involved. This last item is important. In the *Medical Record*, Oct. 10, 1914, in an article by Dr. Isaac Levin, Halstead is reported to claim that 38.8% of his cases of breast cancer operated upon, remained well for *three* years or more. Wertheim, according to Dr. Levin, claims 25% of "cures" from his operative treatment of uterine cancer. Taking Dr. Wm. J. Mayo's report on 996 cases of stomach cancer, Dr. Levin shows that in the hands of a Mayo only about 9% of stomach cancers may be "cured" by surgery alone. He sums up by saying that "in all rather less than 30% of cancer patients can hope to be cured by surgery alone." (Surgery, in this article, refers to knife surgery).

If Halstead, Wertheim, and Mayo make no greater claim for surgery in the treatment of cancer than this, what is to be said for the rank and file of surgeons?

Dr. Levin makes one more remark pertinent to this discussion. He says, "only in carcinoma

of the lip the radical cure by the aid of the so-called block dissection of the tumor and the regional lymph glands is as high as 70 to 83 per cent." It is well known that lip cancer offers, perhaps more than skin cancer, hope for radical "cure" by the surgical route, though "seventy to eighty-three per cent." seems a little high. Be that as it may, it is interesting to know that in England (the only available figures on this particular point), the mortality from cancer of the lip increased 15.2% in the years 1901-1910 as compared with the mortality in the years 1899-1900.

It seemed unnecessary to cumber this study with a multitude of tables and figures, a thing which would have been easy to do. The figures given are by no means exceptional. In fact, with one notable exception, all available and reliable figures covering large numbers of cases have the same general trend as the figures given. The exception referred to is the record of deaths from skin cancer in the city of Greater New York. As recorded, the death rate from cancer of the skin in New York City diminished in the dozen years ending in 1914 something over 60%. However, even that instance deals with comparatively few cases. In no year were there more than 83 deaths from cancer of the skin in New York City.

If the unavoidable conclusions of the investigation herein outlined are truths, they are truths of the utmost importance:—namely, that surgery never has and never can cure cancer by removal of "cancers;" that it is extremely doubtful whether removal of "precancerous" lesions prevents even "cancers;" that such removal certainly cannot prevent cancer, the disease; that our teaching and practice in the matter are absolutely incorrect because we are attacking only a symptom or manifestation instead of the disease; that this teaching and practice have proved not only worse than useless in controlling the disease but that, in one respect at least (recurrences), such teaching and practice actually increase the number of "cancers" and persistently tend, by their false though generally accepted assumptions, to divert cancer research in wrong directions; that, as at present taught and practiced, the most that surgery in cancer can do is to prevent possibly a few "cancers," to relieve, more or less, suffering in some cases, in some cases to prolong life a few months, in a compara-

tively small number of cases for a few years, and in a very small number of cases for many years.

If the conclusions reached in this study are not warranted, that fact should be demonstrated.

Meanwhile it is certainly true that the surgical treatment of cancer, illogical and impotent as it is, is in general the best treatment we have for cancer, though a very poor best. But if our argument is correct we are disastrously over-emphasizing this very poor best.

METHOD OF MAKING THE IODO-TANNIN-GLYCERIN COMPLEX.

BY CLAES JULIUS ENEBUSKE, M.D., CAMBRIDGE, MASS.

DESCRIPTION of the method used in making the iodo-tannin-glycerin complex, which is the dynamic factor of the chemo-therapeutic orthoarteriotomy, by the aid of which the toxæmic cause of abnormal arterial tension (dysarteriotomy), has been experimentally proven by the author of this inquiry.*

In the year 1905, the author read in a French textbook on therapeutics the following words: "Introduit dans le sang, ce métalloïde (l'iode) s'y combine avec le sodium et y circule sous forme d'iodure de sodium. Mais il n'est pas démontré qu'il ne forme pas des combinaisons spéciales avec les albuminoïdes—on en est réduit sur ce point à des hypothèses ou à des expériences *in vitro* toujours sujettes à des interprétations différentes."

The textbook referred to was written by X. Arnozan,† Professor of Therapeutics in the Faculty of Medicine in Bordeaux, and was included in a collection of medical textbooks edited by L. Testut, Professor in the Faculty of Medicine in Lyons, with the collaboration of forty professors of the medical faculties of Paris, Lyons, Bordeaux, Montpellier, and Toulouse. Thus the words quoted may be considered an authentic declaration to the effect that French Science has not solved the problem of organic reaction by iodine "introduit dans le sang" (i.e., absorption of iodine by protein in the blood), and does not pretend to have discovered the action of organic iodine "in sanguine" in contradistinction to the action of io-

* Belongs to paper by Claes Julius Enebuske, entitled "Inquiry through analysis of measurements of the maximum tension of the radialis artery."

† X. Arnozan, *Précis de Thérapeutique*, Paris, 1903, Tome 1, p. 211.

dine, when, after resorption it directly reacts upon bicarbonate of sodium to form iodide of sodium and acts as iodide of sodium.

This problem of iodine-pharmacology, distinguishing between iodine as reacting directly upon bicarbonate of sodium in the blood on the one hand and reacting upon protein (or other organic properties) on the other, interested me particularly because at an earlier period of my life I had been engaged in original iodine research in writing a thesis for the degree of licentiate in philosophy (Lund University, 1885).

After many varied experiments with this problem for a number of years, I obtained, finally, through interaction of and in the presence of iodine, tannin, and glycerin, a completely soluble product without deposition of any insoluble by-product arising through the oxidation of tannin. The soluble product contained all the iodine not in the form of free iodine (with the exception occasionally of a trace of it). On further examination of this product, I found it to possess, besides other properties, the following ones:

1. It was capable of taking up nitrate of silver in an amount equivalent to nine-tenths of the iodine contained in it, forming a perfectly clear and transparent water solution in which even after twenty-four hours there was no deposit of iodide of silver, nor clouding of the solution.

2. It was capable of permeating living animal membranes and carrying all the iodine contained in it through such membranes without injury to them.

3. It possessed a close connection with protein in the blood: it formed a precipitate instantly on contact with colloidal protein, and this precipitate was easily dissolved again when there was a surplus of colloidal protein.

4. It possessed the remarkable physiological property of reducing the maximum tension of the radial artery to the normal level of 150 mm. Hg., or in stricter terms higher than 140 mm., not exceeding 150 mm., in such disturbances of the arterial tension as occur in mental diseases and in certain other diseases.* This action manifests itself in these diseases both when the tension is too low (hypotension) and when it is too high (hypertension) in accordance with the description given in my article in the BOSTON MEDICAL AND SURGICAL JOURNAL.

* Not in hemorrhage, shock, hypostylosis due to valvular lesion or degenerated myocardium, nor in adipositas, asthma, prostatic hypertrophy, etc.

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5. It retained its dynamic and chemical properties without deposition of any insoluble precipitate, even after having been kept in a cellar four years.

The iodine-containing complex described above was made as follows:

Iodine, 1p.; tannin, 4p.; glycerin, 16p. Tannin was dissolved in glycerin by heating it in a water bath, then filtering it to a clear solution, and cooling it to about 60° Fahr. Tannin-glycerin solution and iodine were enclosed in a stoppered glass bottle and placed in a cylinder which by suitable mechanical arrangements was held in rotation, revolving about 15 times a minute. The bottle was placed on an oblique axis in relation to the axis of the cylinder in order to facilitate the thorough mixing of the content in the bottle without shaking it. The rotation continued until all the iodine dissolved. About one week was required to obtain the complete solution at a temperature of about 60° Fahr.

Only the purest grades of chemicals must be used. Even if satisfying the tests prescribed by the pharmacopoeia, the iodine must be re-sublimated; the purest white tannin should be used, and the glycerin must be absolutely neutral, free from the last vestige of rednecent substance. When all the iodine is dissolved and is without any deposit of insoluble precipitate, this solution is left to stand at a temperature of 60 to 70° Fahr., until it does not contain free iodine or, at least, only a trace of it (pale violet color to chloroform).

From this solution as ground substance the active substance is extracted with ether. Immediately thereafter the ether is evaporated at normal temperature, and the residue (free from ether) is dissolved in glycerin and concentrated sugar solution. The titre of iodine is determined by analytical method and the product is preserved in the strength of 5% (or as desired). This product is destined for subcutaneous use and with due precaution can be used intravenously after dilution with physiological chloride of sodium solution. In a case of melancholia, a man 60 years of age, with the maximum radial tension 260 m. m., Hg., reduction to 150 m. m. by the equivalent of 10 cgm. iodine took place within 2½ hours. It takes about six months before the ground substance is ready to be extracted with ether.

A product may be obtained for use in shorter time. For this purpose the iodine-tannin-glycerin solution, after standing from two weeks to one month, is diluted with a concentrated sugar solution to a titre of 5% iodine. This solution may be used after having been kept standing at a temperature of 60° to 70° Fahr., for about two months. At about that time the amount of free iodine is reduced to less than 5% of the total amount of iodine contained in the product. Sugar for this product must be the purest kind, crystallized, pure white and formed in large crystals, and the water should be the purest distilled variety. A special laboratory is required.

The discovery of the action of this form of iodine (orthoarteriotomy through organic reaction of iodine in *sanguine*) and the invention of the manner of making this iodine-complex is due to the fact that the experiments have been carried out by the following methods:

1. Formulation of the problem to find, experimentally, a chemical complex containing iodine and endowed with such chemical properties that, by its internal use, after resorption, iodine must be combined with or chemically react upon protein in the blood or in the tissues.

2. Not spending the oxidizing energy of iodine in such reaction as $I_2 + H_2O + R = 2HI + RO$: for this purpose water is excluded from the presence of iodine, tannin and glycerin until the active product is formed.

3. Observing that no insoluble by-product, arising through the oxidation of tannin, is deposited.

4. Controlling the chemical reaction by titration with one-tenth normal silver-nitrate solution.

5. Controlling the physiological action of the product by radialis-arteriotonometry.

If former investigators had been guided by the above mentioned considerations and measures during their experiments with iodine and tannin, the discovery of orthoarteriotomy and its dynamic factor would perhaps have been made at some earlier period.

The author has also conducted experiments with a view to making the iodine-tannin-glycerin complex for subcutaneous use by some briefer procedure without loss of its physiological action. These experiments will not be con-

cluded by the author, although they have been fairly successful. The author hopes that such experiments may attract the interest of some investigator who will continue them in such a way that the survival of the distinctive action of orthoarteriotomy may be assured.

RULES TO BE OBSERVED IN ORDER TO MAINTAIN THE BIOCHEMIC ADAPTATION (OF THE DYNAMIC FACTOR) TO THE ACTION OF ORTHOARTERIOTOMY.

When the iodine complex described above is to be used it is essential to observe strictly certain technical rules which safeguard the biochemic adaptation to the pharmacodynamic action of orthoarteriotomy. The iodine-tannin-glycerin complex must be diluted with pure water only (not alkaline). The complex must not be mixed with other medicinal substances such as ammonia, fixed alkalies, carbonates of alkalies, alkaline earths, acids, alcohol, iodides, bromides, metallic salts, proteins, starches, oils, extractive substances of medicinal plants, pills, emulsions, decoctions, infusions, and similar substances, because they alter the chemical properties of the iodine complex. At the time when the iodine complex is taken the stomach of the patient must not contain starchy or proteinic residues from the preceding meal, nor must soda fountain drinks, nor beers, wines, alcohol, hydrochloric acid, acetic acid, acids derived from abnormal fermentation. The stomach must not be irritated; for then the dynamic factor may not be resorbed through the pyloric part of the stomach and the adjoining portion of the duodenum, but may be driven into a distant part of the small intestine and decomposed by interaction with carbonate of sodium, and thus the biochemic adaptation of the dynamic factor is lost.

A few rules will suffice to protect the biochemic adaptation of this dynamic factor:

1. It must be taken 15 to 30 minutes before a meal (empty stomach).

2. The patient should be at rest while taking it and for about 15 minutes afterwards, before beginning the meal.

3. Dilute the dose with 50 or at most 100 grams of pure water (not alkaline) and sip it slowly (to favor absorption through the mucous membrane of the pyloric part of the stomach or the adjoining portion of the duodenum before the reaction of the contents becomes markedly alkaline).

4. Do not afterwards force it further down by drinking additional liquids.

5. The 24-hour dose varies 5 to 12 ggm. iodine with exceptional cases of 15 to 25 ggm. If it does not exceed 15 ggm. iodine it may be taken at one time, 15 to 30 minutes before the noon or evening meal. If more than 15 ggm. is required, it is better to divide the daily dose in two or three portions.

6. Determine the dose by controlling the action upon the maximum tension of the radialis artery. This can only be done by means of the radialis-arteriotonometer. If in some cases it is found that 6 ggm. iodine taken on one day is sufficient to sustain a continuous tension of 140 to 150 m.m. Hg. for a whole week, it should be given only once a week.

7. When a larger dose is taken (8 ggm. iodine a day or more), one day of each week should be left free so that any surplus may be eliminated. The adult eliminates about 50 ggm. iodine (in form of iodide of sodium) per week through the kidneys when the dynamic factor of orthoarteriotomy is taken in accordance with the rules.

The above rules are not mere theoretical formulations; the author has tested them clinically, both by means of radialis-arteriotonometry and by urine examination, and they have been found valid.

The following contraindications have been noted by the author for theoretical reasons:

1. High grade of hypertrophy of the heart and valvular lesions.
2. Temperature higher than 99.5° if continued for a long time.
3. Body weight considerably below optimum, if it does not soon increase after beginning the iodine treatment.

THE CHEMICAL CONSTITUTION OF THE ACTIVE PRINCIPLE OF THE IODINE-TANNIN-GLYCERIN COMPLEX.

The properties, chemical, biochemic, and pharmacodynamic which have been described above, support the probability that the iodine in the complex is not present as iodine-anion but as substitute iodine within the radicle of either tannin or glycerin, or both. As long as no derivative of this complex has been produced and investigated, no definite conclusion is permissible in regard to its chemical constitution. To everyone who is qualified to have an opinion in a question of this nature it must be perfectly evident that the constitution of this

complex cannot be determined by chemical interaction *in vitro* with substances, the predominant connection of which with either iodine, tannin or both determines decomposition of the complex. However, the present era in pharmacology and therapeutics is characterized by efforts to define medicinal substances in terms of physiological properties or pharmacodynamic action. Clinical therapeutic methods today employ remedial substances the very existence of which is unknown except as concepts of causes producing biological action which can be observed experimentally. In my investigation the iodine complex is only a means to an end and not the end itself. In this connection the chemical constitution is an accessory question which may be safely trusted to the future.

It seems appropriate here to recall to mind the fact that iodoform was discovered by Serullas in 1822, but its chemical constitution was not determined until 1834 by Dumas. Anaesthesia was discovered in 1845—ether by Morton, and in 1846—chloroform by Simpson. The beneficent results of those discoveries were not withheld from clinical therapeutics through discussion regarding the chemical constitution of ether or chloroform, the interpretation of which has undergone some change since the time of the discovery of anaesthesia. Such questions are outside of pharmacology and therapy.

As already stated, I have conducted this investigation with the purpose of solving a problem pertaining to the pharmacological, biochemic, and therapeutic thought-complex. As proven in a previous publication, this problem is now solved, and the results of my investigation may be summed up as follows:

1. I have furnished experimental proof in support of the assumption that an equal amount of one and the same chemical substance produces essentially different medicinal action depending upon whether or not after resorption it is taken up by or chemically reacts upon one or the other of the constituents of the blood or the tissues (iodine—organic molecule or iodine—bicarbonate of sodium).

2. I have discovered a new mode of medicinal action (new form of pharmacodynamic energy) which I have described and which I have proposed to name "orthoarteriotomy."

3. My investigation has opened the way for evolving other new modes of medicinal action.

4. The iodine-glycerine-tannin complex, be-

ing described in definite pharmacodynamic and biochemic terms and having definitely known composition, belongs to the few medicinal substances which satisfy the requirements of the most recent pharmacology and therapeutics.

A RECORD OF THE FRACTURES AMONG 10,287 MEN DISCHARGED FROM THE UNITED STATES ARMY DURING NOVEMBER, DECEMBER, AND PART OF JANUARY, 1918 AND 1919.*

BY LIEUT.-COL. ISAAC W. BREWER, M.C., CAMP HUMPHREYS, VA.

The records of the physical examination made of men entering and leaving the U. S. Army are a vast mine of information which is of the greatest value to the general public, as well as to the medical profession. Unfortunately a large part of this data has not as yet been collected and digested and put in form where it can be readily used by those who are in need of such information. During my service in the Army I have endeavored to collect, as far as possible, all data that bore in any way upon the public health, and present them in a form that could be readily used by public health officials.

After the signing of the armistice the medical officers at Camp Humphreys began to examine officers and enlisted men for demobilization. Between that time and January 8, 1919, 10,287 officers and men passed through the Examining Board. In looking over the statements made by these men, I was struck by the fact that a very large number of them said they had previously suffered from fractures of one or more bones. I was so impressed with this that I requested the officer in charge of the examinations, Captain Clyde E. Watson, to tabulate the cases reporting previous fractures. This he and his assistant very kindly did, and I am very much indebted to them for the data here presented. A total of 665 fractures are noted, making a rate of 64.7 per thousand.

TABLE I.

FRACTURES (OLD HEALED) FOUND WHILE EXAMINING 10,287 OFFICERS AND MEN FOR DISCHARGE AT CAMP A. A. HUMPHREYS, VIRGINIA.

BONE FRACTURED	NO. CASES
Humerus	101
Colles'	98
Phalanges (fingers and toes)	73
Clavicle	59

Tibia	55
Femur	52
Pott's	40
Forearm	32
Metacarpal	32
Radius	31
Metatarsal	17
Ulna	16
Elbow	15
Fibula	10
Kibs	9
Tarsus	6
Scapula	5
Skull	3
Sternum	2
Lower maxilla	2
Patella	2
Pelvis	2
Malar	1
Vertebra	1
Wrist	1
TOTAL	665

From this table you will see that in this group 15.2% of the fractures were of the humerus 14.8% were Colles' fractures, 10.9% were fractures of the phalanges, 8.8% were fractures of the clavicle, 8.2% were fractures of the tibia, 7.7% were fractures of the femur, and 6.0% were Pott's fractures. These figures are not in accordance with the previous experience in fractures of the U. S. Army. The difference may be accounted for by the fact that in many cases the existence of previous fractures was not determined by examination, but was a matter of recollection with the men. Among the rarer fractures we find fractures of the malar bone 1, 2 cases of fracture of the pelvis, and 1 case of fracture of a vertebra.

The data available for this study, of course, gives no information regarding the cause of the fracture. I therefore had recourse to the last published report of the Surgeon General of the Army, which records 6469 fractures during the year 1917. The causes given for these fractures were as follows: Falls, 32.6%; crushing accidents, 8.5%; automobile, 7.6%; by animals, 5.9%. Whether the same proportions hold good in civil life it is impossible at this time to state from the data at hand. However, it calls attention to the seriousness of this class of accidents, and shows the importance of measures to prevent such accidents. The prevention of accidents is a new conception of public health work which has only recently received the attention of the health authorities. However, it is one which deserves very careful consideration. It is very probable that in the records of the examinations made by the Draft Boards some very valuable information on this subject will be obtained.

* Published by permission of The Surgeon General of the Army.

PNEUMONIA AND EMPYEMA.

BY 1ST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

(continued from page 268.)

13. *Primary Pneumonias.* These made up 88% of the series. Their mortality was strikingly low, only 12%. They developed empyema only half as frequently as post-measles-pneumonias, and when they did get empyema, the mortality was only half that among the measles-pneumonia-empyemas.

TABLE VII. PRIMARY PNEUMONIA.

PERIOD 35 WEEKS FROM SEPT. 27, 1917, THROUGH MAY 31, 1918.

Average strength of command	29,613
Total cases pneumonia all causes	485
No. cases primary pneumonia	427
Percentage of primary pneumonia out of total	88%
No. cases primary pneumonia fatal	50
Case mortality primary pneumonia	12%
Case mortality of 485 pneumonias, all causes	13%
No. of primary pneumonias to get empyema ..	63
Percentage of primary pneumonias to get empyema	15%
No. of primary pneumonias to get empyema and die	23
Case mortality of these primary-pneumonia-empyemas	37%
Case mortality of 77 empyemas, all causes	44%

14. Measles in Consecutive Hundreds of Pneumonia.

a. It seemed desirable to divide pneumonia into consecutive groups for comparison; hundreds were chosen in order to make percentages simple.

b. Of the first 100 pneumonias, 24 were due to measles; presumably because of much greater frequency of measles during that period. The largest figure in any of the four succeeding periods was 9%.

c. Measles cases developed pneumonia *twice* as often during the second period as during any other: in the second period 20% of the measles cases got pneumonia, while the maximum in any other period was 12%. However, during the first period there were nine and one-half times as many measles cases, this greatly reducing the element of chance. This applies to the third period in which measles did not occur as an etiological factor in a single instance. In a subsequent report upon measles at this base hospital this subject will be discussed in detail.

d. *Measles-pneumonia* developed empyema twice as often during the first period as during any other.

e. Query how far this severity during Oc-

tober, November, December and January was due to season and how far to variation in virulence of the prevalent organisms.

TABLE VIII. MEASLES, PNEUMONIA AND EMPYEMA.

PNEU. CASES	PERIOD	MEASLES DURING SAME PERIOD	MEAS. CASES IN EACH PERIOD TO GET PNEUMONIA		CASES MEAS.-PNEU. IN EACH PERIOD TO GET EMPYEMA	
			No.	Per	No.	Per
1-100	{ Sept. 27, 1917— Feb. 13 }	418	24	6%	11	46%
101-200	{ Feb. 14, 1918— Mar. 19 }	44	9	20%	2	22%
201-300	{ Mar. 20, 1918— Apr. 8 }	22	0	0	2	0
301-400	{ Apr. 9, 1918— May 3 }	25	3	12%	1	33%
401-485	{ May 4, 1918— May 31 }	79	5	6%	0	0
	{ Sept. 27— —May 31 }	588	41	7%	14	34%

TABLE IX. MEASLES-PNEUMONIA.

Of 485 pneu-	{ 444 did not have measles .. = 92%
monia cases	{ 41 were preceded by measles = 8%
Of the 444 cases without measles, 51 died	= 11%
Of the 41 cases with measles, 13 died	= 32%
Total mortality, 64	= 13%
Of the 588 measles cases, 41 developed pneumonia	= 7%

TABLE X. MEASLES-PNEUMONIA.

PERIOD OF 35 WEEKS, FROM SEPT. 27, 1917, THROUGH MAY 31, 1918.

Average strength of command	29,613
No. cases measles	588
No. cases pneumonia after measles	41
Case incidence of pneumonia in measles	7%
Total cases pneumonia, all causes	485
Percentage of measles-pneumonia out of total pneumonias	8%
No deaths in these pneumonias after measles ..	13
Case mortality in these pneumonias after measles	32%
Case mortality of 485 pneumonias, all causes ..	13%
No. empyemas after measles-pneumonia	14
Percentage of measles-pneumonia to develop empyema	34%
No. deaths in these empyemas after measles ..	11%
Case mortality in these empyemas after measles	79%
Case mortality of 77 empyemas, all causes ..	44%

The *interval* between the onset of measles and the onset of pneumonia was:

a. *Less than 2 weeks* in 66% of the measles cases.

b. *18 days* on the average.

c. The latter figure is surprisingly large, especially in view of the figure under a. Its size is due to the inclusion in the series, of 5 pneumonias occurring 6, 7, 9, 11, and 13 weeks after measles. Although these were literally post-measles-pneumonia, it may be questioned whether

at this distance they were really due to the measles. The 5 cases were, however, retained in the series owing to the difficulty of drawing a line. If they be excluded, the average for *b* becomes 14 days.

TABLE XI. INTERVAL BETWEEN ONSET OF MEASLES AND ONSET OF PNEUMONIA.

	No. Cases
Less than 24 hours	2
(1-) 2 days	0
(2-) 3 "	4
(3-) 4 "	1
(4-) 5 "	6
(5-) 6 "	0
(6-) 7 "	4
(1-) 2 weeks	10
(2-) 3 "	5
(3-) 4 "	4
(4-) 5 "	0
(5-) 6 "	1
(6-) 7 "	1
(7-) 8 "	0
(8-) 9 "	1
(9-) 10 "	0
(10-) 11 "	1
(11-) 12 "	0
(12-) 13 "	1
	41

15. *Post-Ether Pneumonia* comprised only 4% of the series. Not one of these 17 cases occurred on the ear, nose and throat service, perhaps because of the shorter duration of anesthesia. These 17 formed 1.2% of all the ethers given. This may be compared with the varying percentages: Silk 0.26 of 5,000 cases; Norris 0.35 of 139,000 cases; Gebele 6.4 of 1,196 cases. "That anesthetics and operations may not infrequently be unjustly blamed, is shown by such cases as have been reported by Gould and Da Costa, in which unsuspected pneumonia was accidentally discovered just before etherization" (Norris in Osler-McCrae, I, 237).

TABLE XII. PNEUMONIA SECONDARY TO ANESTHESIA.

PERIOD OF 35 WEEKS, FROM SEPT. 27, 1917, THROUGH MAY 31, 1918.

Average strength of command	29,613
Total cases pneumonia, all causes	485
No. cases post-ether pneumonia (none in otolaryngological service)	17
Percentage of postether pneu. out of all pneu.	4%
No. operations with ether anesthesia:	
Otolaryngological	291
General operating room	1,160
Case incidence of pneumonia out of all ethers	1.2%
No. deaths in these pneumonias	0
No. empyemas after these pneumonias	0

The operations were: Appendectomy, 6; herniotomy, 8; varicocele excision, 1; axillary abscess incision, 1; circumcision, 1; total, 17;

The intervals between anesthesia and pneu-

monia onset: (a) Averaged 3 days. (b) Was less than 48 hours in 65% of the cases.

TABLE XIII.

Less than 24 hours	3
(1-) 2 days	8
(2-) 3 "	2
(3-) 4 "	0
(4-) 5 "	2
(5-) 6 "	1
(6-) 7 "	0
(7-) 8 "	0
(8-) 9 "	1
	17

11 = 65%

The interval between the onset and the diagnosis of pneumonia has been unduly long in some of these post-operative cases just as in the series in general.

a. Average diagnosis made 2.5 days after onset.

b. Diagnosis within 48 hours after onset in 71% of the cases.

TABLE XIV. INTERVAL BETWEEN ONSET AND DIAGNOSIS.

Less than 24 hours	5
(1-) 2 days	7
(2-) 3 "	2
(3-) 4 "	0
(4-) 5 "	2
(5-) 6 "	0
(6-) 7 "	0
(7-) 8 "	1
	17

12 = 71%

There is justification in the noteworthy fact that pneumonia was generally suspected from the sudden rise in temperature and respirations, yet on physical examination, no râles could be found on cough. In two of these cases in which Captain Bagnall happened to be the medical consultant, the only physical finding was remarkable dullness and dim breath sounds, but without râles or bronchovesicular breathing, a complex suggesting fluid rather than the pneumonia, which, however, became clear after a couple of days.

16. *Onset.* As to manner of onset, two views are in the literature: (a) "An abrupt onset is the rule . . . in 80 % of (his) cases with exact data." (Norris, p. 220.) (b) "In a considerable number of cases the onset is gradual, with a number of days or even weeks of coryza or mild bronchitis preceding the actual onset of the pneumonia. This is why all cases with such symptoms should be carefully watched and any exacerbation of symptoms should at once raise the question of the possible

onset of pneumonia." (Cole, R., "Medical Clinics of North America," Nov., 1917, I, 546.)

The latter view is supported by the data in this series of 485 cases: 1. Average day of diagnosis,=*fifth* day of the disease.

2. Only 31% of patients gave a distinct story of brisk onset.

The *prodromes* most often noted here were the usual ones: pain in side of chest involved (only once seen opposite), anorexia, headache, malaise, tonsillitis, cough.

The following textbook *symptoms* were seldom or never noted in the records: abdominal pain or vomiting, restlessness, delirium, convulsions, somnolence or insomnia; parotitis or epistaxis; shallow resp., expiratory grunt, dyspnoea or cyanosis.

17. Date of Diagnosis of Pneumonia.

a. Only 55% of the 485 cases were diagnosed within the first *three* days of the disease.

b. 27% more of the total number were diagnosed during the fourth, fifth and sixth days of the disease.

c. 18% of the cases were not diagnosed till more than a week after onset. This was apparently due partly to the frequency of abortive cases, which in civil life are often called a bronchitis, or perhaps a "threatened pneumonia," and partly to the overlooking of the great indicator value of even slightly rapid respiration.

d. The average diagnosis was not made till the fourth day of the pneumonia.

TABLE XV. DIAGNOSIS OF PNEUMONIA.

DAY OF DISEASE ON WHICH DIAGNOSIS OF PNEUMONIA WAS MADE	NO. CASES	
1st	82	205 = 55%
2nd	103	
3rd	80	
4th	56	133 = 27%
5th	50	
6th	27	
7th	26	87 = 18%
8th	17	
9th	11	
10th	7	
11th	4	
12th	6	
13th	4	
14th	3	
15th	4	
16th	0	
17th	0	
18th	4	
19th	0	
20th	1	
	485	=100%

(To be continued.)

American Medical Biographies.

ELMER, JONATHAN (1745-1817).*

The family of Elmer in New Jersey was descended from Edward, who came to America with the company of forty-seven that comprised the church of the Rev. Thomas Hooker, in Cambridge, Mass., in 1632. Edward is believed to have been a grandson of John Aylmer, educated at Oxford, a protestant, and a tutor of the unfortunate Lady Jane Gray. He was made Bishop of London by the name of John Elmer.

Jonathan, the son of the Rev. Daniel, was born at Cedarville, Cumberland County, New Jersey, November 29, 1745, and died at Bridgeton, September 3, 1817. He was one of the ten who first received the degree of Bachelor of Medicine from the University of Pennsylvania. Three years after, he was given the degree of Doctor of Medicine in the same university (1768). Being from the first of feeble health, he was disabled early in life for active exertion and therefore confined himself very much to study, being a laborious and diligent student. Besides his knowledge of medicine he was well read in law and theology. In personal appearance he was slender and erect; neat in his dress, and stately in his address. He possessed a firm and unbending selfwill, which was perhaps intensified by his secluded habits. At the time of his decease, L. H. Stockton, Esq., in a short notice of him in the *Trenton Federalist*, said that "in medical erudition the writer remembers his illustrious contemporary, the late Dr. Rush, frequently said that Dr. Elmer was exceeded by no physician in the United States." He was elected a member of the New Jersey Medical Society, only recently founded, in 1772. This society held no meetings during the war, from 1775 to 1781. Dr. Elmer was elected president of the rehabilitated society in 1787, the year prior to his election to the United States Senate, and delivered two "Dissertations" before the meetings of that body. These dissertations, entitled "On the Chemical Principles of Bodies," and "On the Different Properties of the Air Contained in the Atmosphere," were published in the Transactions.

On the breaking out of the war Dr. Elmer laid aside the duties of his chosen calling and became

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

an ardent friend of regulated liberty. He was Whig sheriff when in November, 1774, a company of disguised men burned the tea stored at Greenwich. Although he was supposed to know who were the culprits he did not apprehend them. He was appointed delegate to the Provincial Congress, was a member of the Legislature of the state and was in the National Senate.

The following extract from the Journal of William Maclay, a fellow Senator in 1789, throws light on his character:

"I know not, in the Senate, a man if I were to choose a friend, on whom I would cast the eye of confidence as soon as on this little doctor. He does not always vote right—and so I think of every man who differs from me, but I never saw him give a vote, but I thought I could observe his disinterestedness in his countenance. If such an one errs, it is the sin of ignorance and I think Heaven has pardons ready sealed for every one of them."

While in Congress Dr. Elmer was placed on the medical committee, visiting in this relation the various hospitals within reach by long journeys on horseback, and it was on one of these journeys that he met his brother, Surgeon Ebenezer Elmer, at the military hospital at headquarters, Morristown, when the brother was on his return from his northern campaign.

A very neatly written and legible letter from Dr. Elmer as president of the New Jersey Medical Society, dated Trenton, 22nd January, 1788, to the president of the Massachusetts Medical Society is preserved in the archives of the latter society.

Dr. Elmer held the office of presiding judge in the Court of Common Pleas in Cumberland County, which he resigned in 1814, on account of increasing age and infirmity, remarking to his associates, as he took his final leave of them, that it was forty-two years since he became an officer of the court, and he had lived to see every person who was a member of it, both on the bench and at the bar, consigned to the house appointed for all the living.

He died at the age of 71 and was buried in the Bridgeton cemetery.

WALTER L. BURRAGE, M.D.

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Medical Legislation.

TEXT OF THE AMENDED HARRISON ACT.

SECTION 1. That on or before July 1 of each year every person who imports, manufactures, produces, compounds, sells, deals in, dispenses, or gives away opium or coca leaves, or any compound, manufacture, salt, derivative, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business and place or places where such business is to be carried on, and pay the special taxes hereinafter provided;

Every person who on January 1, 1919, is engaged in any of the activities above enumerated, or who between such date and the passage of this Act first engages in any of such activities, shall within 30 days after the passage of this Act make like registration, and shall pay the proportionate part of the tax for the period ending June 30, 1919; and

Every person who first engages in any of such activities after the passage of this Act shall immediately make like registration and pay the proportionate part of the tax for the period ending on the following June 30th;

Importers, manufacturers, producers, or compounders, \$24 per annum; wholesale dealers, \$12 per annum; retail dealers, \$6 per annum; physicians, dentists, veterinary surgeons, and other practitioners lawfully entitled to distribute, dispense, give away, or administer any of the aforesaid drugs to patients upon whom they in the course of their professional practice are in attendance, shall pay \$3 per annum.

Every person who imports, manufactures, compounds, or otherwise produces for sale or distribution any of the aforesaid drugs shall be deemed to be an importer, manufacturer, or producer.

Every person who sells or offers for sale any of said drugs in the original stamped packages, as hereinafter provided, shall be deemed a wholesale dealer.

Every person who sells or dispenses from original stamped packages, as hereinafter provided, shall be deemed a retail dealer: *Provided*, That the office, or if none, the residence, of any person shall be considered for the purpose of this Act his place of business; but no employee or any person who has registered and paid special tax as herein required, acting

within the scope of his employment, shall be required to register and pay special tax provided by this section: *Provided further*, That officials of the United States, Territorial, District of Columbia, or insular possessions, State or municipal governments, who in the exercise of their official duties engage in any of the business herein described, shall not be required to register, nor pay special tax, nor stamp the aforesaid drugs as hereinafter prescribed, but their right to this exemption shall be evidenced in such manner as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may by regulations prescribe.

It shall be unlawful for any person required to register under the provisions of this Act to import, manufacture, produce, compound, sell, deal in, dispense, distribute, administer, or give away any of the aforesaid drugs without having registered and paid the special tax as imposed by this section.

That the word "person" as used in this Act shall be construed to mean and include a partnership, association, company, or corporation, as well as a natural person; and all provisions of existing law relating to special taxes, as far as necessary, are hereby extended and made applicable to this section.

That there shall be levied, assessed, collected, and paid upon opium, coca leaves, any compound, salt, derivative, or preparation thereof, produced in or imported into the United States, and sold, or removed for consumption or sale, an internal-revenue tax at the rate of one cent per ounce, and any fraction of an ounce in a package shall be taxed as an ounce, such tax to be paid by the importer, manufacturer, producer, or compounder thereof, and to be represented by appropriate stamps, to be provided by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury; and the stamps herein provided shall be so affixed to the bottle or other container as to securely seal the stopper, covering, or wrapper thereof.

The tax imposed by this section shall be in addition to any import duty imposed on the aforesaid drugs.

It shall be unlawful for any person to purchase, sell, dispense, or distribute any of the aforesaid drugs except in the original stamped package or from the original stamped package; and the absence of appropriate tax-paid stamps

from any of the aforesaid drugs shall be *prima facie* evidence of a violation of this section by the person in whose possession same may be found; and the possession of any original stamped package containing any of the aforesaid drugs by any person who has not registered and paid special tax as required by this section shall be *prima facie* evidence of liability to such special tax: *Provided*, That the provisions of this paragraph shall not apply to any person having in his or her possession any of the aforesaid drugs which have been obtained from a registered dealer in pursuance of a prescription, written for legitimate medical uses, issued by a physician, dentist, veterinary surgeon, or other practitioner registered under this Act; and where the bottle or other container in which such drug may be put up by the dealer upon said prescription bears the name and registry number of the druggist, serial number of prescription, name and address of the patient, and name, address, and registry number of the person writing said prescription; or to the dispensing, or administration, or giving away of any of the aforesaid drugs to a patient by a registered physician, dentist, veterinary surgeon, or other practitioner in the course of his professional practice, and where said drugs are dispensed or administered to the patient for legitimate medical purposes, and the record kept as required by this Act of the drugs so dispensed, administered, distributed, or given away.

And all the provisions of existing laws relating to the engraving, issuance, sale, accountability, cancellation, and destruction of tax-paid stamps provided for in the internal-revenue laws are, in so far as necessary, hereby extended and made to apply to stamps provided by this section.

That all unstamped packages of the aforesaid drugs found in the possession of any person, except as herein provided, shall be subject to seizure and forfeiture, and all the provisions of existing internal-revenue laws relating to searches, seizures, and forfeitures of unstamped articles are hereby extended to and made to apply to the articles taxed under this Act and the persons upon whom these taxes are imposed.

Importers, manufacturers, and wholesale dealers shall keep such books and records and render such monthly returns in relation to the

transactions in the aforesaid drugs as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may by regulations require.

The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect.

Section 2 deals with the sale, barter, exchange, or giving away of any drugs other than those distributed in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue.

Section 3. That any person who shall be registered in any internal-revenue district under the provisions of section one of this Act, shall whenever required so to do by the collector of the district, render to the said collector a true and correct statement or return, verified by affidavit setting forth the quantity of the aforesaid drugs received by him in said internal revenue district during such period immediately preceding the demand of the collector, not exceeding three months, as the said collector may fix and determine; the names of the persons from whom the said drugs were received; the quantity in each instance received from each of such persons, and the date when received.

Section 4. That it shall be unlawful for any person who shall not have registered and paid the special tax as required by section one of this Act to send, ship, carry, or deliver any of the aforesaid drugs from any state or territory or the District of Columbia, or any insular possession of the United States, to any person in any other state or territory or the District of Columbia, or any insular possession of the United States: *Provided*, That nothing contained in this section shall apply to common carriers engaged in transporting the aforesaid drugs, or to any employee acting within the scope of his employment, of any person who shall have registered and paid the special tax as required by section one of this Act, or to any person who shall deliver any such drug which has been prescribed or dispensed by a physician, dentist, or veterinarian required to register under the terms of this Act, who has been employed to prescribe for the particular patient receiving such drug, or to any United States, State, county, municipal, district, terri-

torial, or insular officer or official acting within the scope of his official duties.

Section 5 provides for the inspection by officers, agents, and employees of the Treasury Department duly authorized for that purpose duplicate-order forms, prescriptions, statements, and returns.

Section 6. That the provisions of this Act shall not be construed to apply to the manufacture, sale, distribution, giving away, dispensing, or possession of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semisolid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitute for them: *Provided*, That such remedies and preparations are manufactured, sold, distributed, given away, dispensed, or possessed as medicines and not for the purpose of evading the intentions and provisions of this Act: *Provided further*, That any manufacturer, producer, compounder, or vendor (including dispensing physicians) of the preparations and remedies mentioned in this section shall keep a record of all sales, exchanges, or gifts of such preparations and remedies in such manner as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall direct. Such record shall be preserved for a period of two years in such a way as to be readily accessible to inspection by any officer, agent, or employee of the Treasury Department duly authorized for that purpose, and the State, territorial, district, municipal, and insular officers named in section five of this Act, and every such person so possessing or disposing of such preparations and remedies shall register as required in section one of this Act and, if he is not paying a tax under this Act, he shall pay a special tax of \$1 for each year, or fractional part thereof, in which he is engaged in such occupation, to the Collector of Internal Revenue of the district in which he carries on such occupation as provided in this Act. The provisions of this Act as amended shall not ap-

ply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.

Section 7 relates to the assessment, collection, remission, and refund of internal-revenue taxes. Section 8 states that it shall be unlawful for any person not registered under the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs. Section 9 deals with the penalties which must be suffered by any person who violates or fails to comply with any of the requirements of this Act. Section 10 authorizes the appointment of such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers as may be necessary to enforce the provisions of this Act.

Section 11. That the sum of \$150,000, or so much thereof as may be necessary, be, and hereby is, appropriated, out of any moneys in the Treasury not otherwise appropriated, for the purpose of carrying into effect the provisions of this Act.

Section 12. That nothing contained in this Act shall be construed to impair, alter, amend, or repeal any of the provisions of the Act of Congress approved June thirtieth, nineteen hundred and six, entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded, or poisonous, or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," and any amendment thereof, or of the Act approved February ninth, nineteen hundred and nine, entitled an "Act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

Section 1008. That all opium, its salts, derivatives, and compounds, and coca leaves, salts, derivatives, and compounds thereof, which may now be under seizure or which may hereafter be seized by the United States Government from any person or persons charged with any violation of the Act of October 1, 1890, as amended by the Acts of March 3, 1897, February 9, 1909, and January 17, 1914, or the Act of December 17, 1914, shall upon the conviction of the person or persons from whom seized be confiscated by and forfeited to the United States; and the Secretary is hereby authorized to deliver for medical or scientific purposes to any depart-

ment, bureau, or other agency of the United States Government, upon proper application therefor under such regulation as may be prescribed by the Commissioner, with the approval of the Secretary, any of the drugs so seized, confiscated, and forfeited to the United States.

The provisions of this section shall also apply to any of the aforesaid drugs seized or coming into the possession of the United States in the enforcement of any of the above-mentioned Acts where the owner or owners thereof are unknown. None of the aforesaid drugs coming into possession of the United States under the operation of said Acts, or the provisions of this section, shall be destroyed without certification by a committee appointed by the Commissioner, with the approval of the Secretary, that they are of no value for medical or scientific purposes.

Book Review.

A Textbook of Home Nursing. EVELEEN HARRISON. Second Edition. New York: The Macmillan Company. 1918.

During the last four years, throughout the entire civilized world, has come a greater call for nurses than ever before; and in order that this call be answered, thousands of women highly trained in the nursing profession have left civil life to enter military organizations for service. In consequence of this, the demand to "carry on" in civilian homes has been met by women, who, though lacking the practical experience of the professional nurse, can learn to execute orders in an intelligent manner under the direction of the doctor.

Such a guide as the author has outlined in this volume should prove a helpful one to the lay woman who endeavors to make herself a good "home nurse." In the twelve chapters of the book there is much that is of practical value. Without going into technical details of professional nursing, it holds strictly to its title and explains in a clear and interesting manner the choice and preparation of room and bed; atmospheric temperature; ventilation; comforts for the patient; temperature, pulse, respiration; the giving of medicines, baths; symptoms and nursing of infectious diseases; prevention and care of coughs and colds; nursing in grip, bronchitis and pneumonia; nursing of children; preparation of a patient for a surgical operation at home; first-aid emergencies; recipes for invalid cooking and the serving of dainty dishes.

The second edition of this "Textbook of Home Nursing" is well worth consideration.

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REPORT OF THE BOSTON CITY HOSPITAL.

THE fifty-fourth annual report of the Boston City Hospital describes the work during the year 1917-1918 of the main hospital, the South Department for infectious diseases, the Haymarket Square Relief Station, the East Boston Relief Station, the Convalescent Home at Dorchester, and the West Department.

The Boston City Hospital was opened for the admission of patients on June 1, 1864. Since that time, the number of house patients treated in the different departments has been 452,543, and the number of out-patients, 1,763,376. On January 31, 1917, there were 662 patients remaining in the hospital proper. During the year, there were admitted 17,585 patients, including 5,726 for medical and 6,899 for surgical services; 2,126 for gynecological and obstetrical care, 162 for ophthalmic, 1,969 for aural and laryngological, 608 for neurological,

and 95 for dermatological service. There were discharged during the year 15,917 patients, and 1,697 persons died, leaving in the main hospital on January 31, 1918, 633 patients. There were 362 births during the year. The largest number of patients in the hospital at any one time was 732, and the smallest, 486, giving a daily average of 606 patients. The ambulance service made 5,632 trips, carrying 5,440 patients in transportation to the hospital and 592 from it.

The X-ray Department has been provided with much new material during the past year. There has been a great increase in the teaching clinic, both to medical students and to officers of the Medical Corps, U. S. A. Most of the teaching in the army X-ray school, located in Boston, has been done in this department. Considerable assistance has been given also to army students taking other courses in the hospital.

In the pathological laboratory, research work has been practically impossible because of the depletion of the medical staff by war service. The routine work has been maintained as usual. The results obtained in the investigation of measles are interesting so far as they go: the cell changes which occur in the lesions of the skin have been discovered, but nothing definite in regard to the etiology of the disease has been determined.

The present capacity of the hospital departments can provide beds for 1,233 patients, of whom 680 can be cared for by the hospital proper, 340 by the South Department, 165 by the West Department (as yet unopened), 24 by the Haymarket Relief Station, 10 by the East Boston Relief Station, and 34 by the Convalescent Home.

The number of visits of patients to the hospital for advice and treatment in the Out-patient Department amounted to 144,167; of these, 11,812 were for medical, and 84,907 for surgical treatment, 6,871 for diseases of the eye, 11,280 for the ear and throat, 4,624 for skin diseases, 4,042 for the diseases of women, 5,747 for diseases of the nervous system, 10,613 for X-ray and radium treatment and examination, and 4,271 for vaccine and serum inoculation.

During the year 3,168 patients were admitted to the South Department; 2,612 were discharged well, 188 relieved, 18 not relieved, and 251 died. The daily average number of patients has been 247.7.

The Haymarket Square Relief Station has

been in existence for 16 years. During this time 546,469 patients have been treated. 27,273 of whom received treatment in 1917-1918.

During the nine years that the East Boston Relief Station has been in operation, 122,428 patients have been treated; 10,918 received treatment during the year.

There were 369 patients admitted to the Convalescent Home during the year.

The Training School for Nurses has completed its thirty-ninth year. During 1917-1918, 32 pupils were graduated and 82 probationers were admitted. Twenty-four nurses have completed obstetrical nursing at the Boston Lying-In Hospital and the New England Hospital, and six are now taking the training. Fifty-six pupils from affiliated schools have completed courses of from three to ten months.

The entire expenditures for all departments of the hospital for maintenance during the fiscal year amounted to \$865,615.55. A total amount of \$129,805.99 has been received by the hospital from paying patients.

The following changes in rules have been made during the year:

A dental service was established, the following titles being created: a dentist in chief, an assistant dentist in chief, three visiting dentists.

The Neurological Department was separated from the Dermatological Department.

The following committee was chosen to plan and control the method of instruction in the Training School for Nurses: the Hospital Superintendent, the Superintendent of Nurses, and one member of the Senior Staff.

Owing to conditions existing as a result of war, the term of service for medical, surgical, and gynecological house officers was reduced to four periods of three months each.

The hours of treatment of out-patients was changed from "9 to 11 A.M." to "8.30 to 10.30 A.M."

It was voted that during the period of the war the Neurological Out-Patient Department be open only three days each week.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.

THE American Board of Ophthalmic Examinations was organized in 1916, after preliminary work extending over three years. In 1913, committees were appointed by the American Ophthalmological Society to report on Ophthalmic education. In 1914, these committees recommended that graduate courses requiring not less than two years of systematic work in ophthalmology, leading up to an appropriate degree, be established in leading medical schools.

The functions of the Board are namely three:

1st. To establish standards of fitness to practise ophthalmology;

2nd. To investigate and prepare lists of medical schools, hospitals and private instructors recognized as competent to give the required instruction in ophthalmology;

3rd. To arrange, control and supervise examinations to test the preparation of those who desire to practise ophthalmology, and to confer a certificate upon those who meet the standards established.

The conferring of a degree is left in the hands of the universities, and the Board makes no attempt to control the practice of ophthalmology by any license or legal regulation. It aims merely to establish a standard of fitness to practise ophthalmology, and to give certificates to any who voluntarily apply for examination and satisfy the Board of their fitness. After 1920, this certificate will be required of all applicants for membership in the American Ophthalmological Society. This certificate is acceptable also by the American College of Surgeons as a credential of professional qualification in ophthalmology. The examinations will be thorough, but not unduly exacting, above present available facilities for preparation to practise. They are designed to test the general competency both of the older practitioner, who may have lost his grasp of details but whose experience has proved his work to be of high character, and of the recent graduate, whose judgment cannot be expected to be so mature as that of an older practitioner. The Board will be glad to suggest courses which will enable those who do not pass examinations to overcome their deficiencies. In some cases, the applicant's professional record may be of such

high standing that a certificate may be granted to him without further examination.

According to the length of time that they have practised ophthalmology, applicants for examination are divided into three divisions—first, over ten years; second, five to ten years; third, less than five years.

High ethical and medical standing in their communities is required of all, also a medical degree satisfactory to the Board. In addition, applicants will furnish a list of papers or books they have published.

Members of division 2 are required to have served a term as interne or as assistant in an eye clinic, or with an ophthalmologist in private work; or in lieu of this, they may submit reports of cases and operations performed.

Division 3 must have served at least a year in an ophthalmic clinic, or as ophthalmic interne or private assistant, and, in addition, must have had a year of special study, covering all important branches of ophthalmology. Not necessarily continuous or all in one school, but shorter periods than three months of study are deprecated by the Board.

After 1920 a year of clinical or laboratory work, preferably in a general hospital following four years in a medical school, will be required of Division 3 preliminary to special study of ophthalmology, and service as ophthalmic interne.

In determining the question of certification, the examiners rely on the following criteria: a practical, clinical, and laboratory examination, a written examination, the applicant's professional record, and written reports. The purpose of this Board is a worthy one, and its efforts to raise the standing of ophthalmology should receive the support and coöperation of ophthalmologists.

BRITISH MILITARY MEDICAL SERVICES IN 1918.

THE fifth annual review of the British military medical services in the war, with tables of casualties and honors, has appeared recently in the *British Medical Journal*.

The mortality among medical officers during four and a quarter years of war, including medical men in all services who have died of

wounds, or who were lost at sea by enemy action, are included in the following table:

Year 1914 (5 months)	Killed 46	Died 9	Total 65
Year 1915	Killed 97	Died 45	Total 142
Year 1916	Killed 162	Died 98	Total 260
Year 1917	Killed 200	Died 93	Total 293
Year 1918	Killed 173	Died 163	Total 336
Total	Killed 678	Died 408	Total 1086

In actual numbers, the temporary officers of the R.A.M.C. have the greatest number of deaths, the number killed among these officers being more than four times, and the number of deaths from disease being over double those of any other group. The total number of these officers, however, is far greater than that of any other class.

In 1917, the proportion of deaths to strength was probably higher in the Australian A.M.C. than in any other medical service. In 1918, it has been the Canadians who probably furnish the highest proportionate mortality. The greatest number of casualties have occurred in France and Flanders, though other fronts—Italy, the Balkans, Palestine, Mesopotamia, and East Africa—have all contributed their share. Many deaths from disease have occurred, of course, in England.

In the Royal Navy Medical Service, there were fourteen killed during the year. In the Royal Army Medical Corps, there were thirteen killed and thirteen deaths from disease. Of the Special Reserve, ten were killed; of the Territorial forces, sixteen were killed, and twenty died. Of the temporary medical officers, eighty-six were killed, and fifty-four died.

Among the medical corps of the Dominion forces, losses fell most heavily on the Australians in 1917, on the Canadians in 1918. In 1917 the Australians lost eighteen killed, and five died; in 1918, only seven were killed, and two died. The Canadians, on the other hand, lost twenty killed, and twelve died, as compared with only four and seven in 1917. The twenty killed include six lost at sea, all in the *Llandovery Castle*. Of the New Zealanders, three were killed and one died; the South Africans lost one killed, and four died.

The total number of wounded was 500; there were 105 missing, and 128 prisoners.

In the dental service, two dental surgeons were killed as combatants and three in the British, and two in the Canadian service died.

The number of medical students reported

killed in 1916 was 57; in 1917, 35; in 1918, 16.

In the Indian Medical Service, no officer was reported killed during 1918, but fifteen officers died while serving. Of the Indian Medical Department, three military assistant surgeons died in service. In the African Medical Service, there have been five deaths.

The nursing services have suffered far more heavily in 1918 than in any previous year of the war. Nine members were reported killed, no fewer than thirty-nine were lost at sea, and seventeen were returned as wounded. Six Canadian nurses were killed or died of wounds in the bombing of the Canadian hospitals at Etaples by enemy aircraft on May 25, and six more were wounded on that occasion. The remaining casualties, other than those at sea, were presumably also caused by enemy aircraft. The number who have died of disease has also been very large. The nursing profession, both civil and military, suffered very severely from the influenza epidemic in the last quarter of 1918, probably more severely than any other class of the community, the very high fatality among nurses being presumably due to infection at a period of excessive work.

A total of 1518 honors have been granted during 1918. The most coveted honor of all, the Victoria Cross, was conferred on only two medical officers during the year—Captain J. Fox Russell, T.F. (posthumously) on January 11th, and Captain B. S. Hutcheson, Canadian A.M.C., on December 14th. Ten V.C.s and two clasps have been gained by medical officers during the war; no other clasps, except these two, have ever been given. Out of the total of twelve, four Crosses and one clasp have been won by Territorials, two Crosses and one clasp by temporary officers, to Crosses by Canadians, and one each by the regular R.A.M.C. and the I.M.S.

Every part of the British Military Medical Service has rendered faithful and unselfish service, and in many instances has sacrificed the lives of its members for the sake of humanity.

ANNUAL REPORT OF THE CRAIG COLONY FOR EPILEPTICS.

THE twenty-fifth annual report of the medical superintendent of the Craig Colony for Epi-

leptics for the year ending June 30, 1918, was submitted on October 8, 1918.

This institution, located at Sonyea, New York State, is maintained solely by State appropriations. In order to be admitted to the Colony, the applicant must be a legal resident of the State of New York. All are admitted on the same basis, as indigents, and if it is later found that the patient or a relative can reimburse the State in whole or in part, they are expected to do so. Epileptics of all ages are received. Patients who are markedly delinquent or insane are not admitted, and in order to secure a patient's admission it is necessary to consult the Superintendent of the Poor of the County or the Commissioner of Charities of the State in which the applicant lives. Applicants who are mentally incompetent must be committed through a Court of Record.

The policy of the Colony is to explain to the applicant, if he is sufficiently intelligent, that he is going to a hospital for care and treatment such as his condition requires. In a public institution such as Craig Colony, a large number of the applicants are markedly or permanently impaired mentally. Nevertheless, various activities have been undertaken in the way of instruction, etc. A sloyd teacher, an arts and crafts teacher, a band master, and an instructor in making willow ware have been employed. A Red Cross branch of 121 members has been very active in making garments for the soldiers.

The treatment of an epileptic at the Colony embraces such ordinary medical and surgical treatment as may be given. All newly admitted patients receive an ophthalmological examination and a dental examination. As soon as the patient enters the hospital a thorough mental and physical examination is made as a basis for further treatment. As soon as conditions permit it, funds will be available for the purpose of follow-up work with discharged patients. It is believed that many epileptics, if suitable employment were provided, together with advice from time to time, could live in the outside world. Religious services are held regularly in the Colony and recreation and amusement have also been carefully provided for.

Incorporated in the report of the president of the board of managers, is the steward's report, which summarizes in an interesting manner the accounts of the farm garden and dairy.

and the other industries in which the patients have taken a part.

During the year 79% of all the deaths reported were submitted to autopsy under proper authority and the tabulation of cases abstracted, together with clinical records, form an interesting study in pathological research.

BOSTON MEDICAL LIBRARY.

THE forty-third annual report for the year 1918 of the Boston Medical Library is received with interest. The number of readers in the Library has been somewhat diminished because of the absence of many of its members in war service; but medical officers sent from other states for instruction here, women interested in infantile paralysis and in reconstruction work for disabled soldiers, and Red Cross nurses and volunteers have been glad to avail themselves in their study of the privileges which the Library affords. The shortage of coal made it necessary to close the Library at some times when, under normal conditions, it has usually welcomed readers.

There have been fewer medical publications than usual during the past year. Some important German journals, which have been delayed because of the war, have been received; but there are numbers of leading journals for the last two or three years which are still missing. The Committee on Importations has secured a special license from the State Department in Washington to import German scientific periodicals. There were 4,698 books and 518 pamphlets added to the Library during 1918, and a total of 546 current periodicals have been received. The number of memberships, including honorary and life members, Fellows and Associates is now 802. A list of books which have been donated to the Library during the year is included in this report.

GEORGES CLÉMENCEAU.

THE recent attempt upon the life of Georges Clémenceau has recalled the fact unknown to many that this famous French statesman was once a physician, and, furthermore, at one time a teacher in this country. He was born in

Monilleron-en-Pareds, Department of Vendée, on September 28, 1841. In 1861, he went to Paris for the purpose of studying medicine, and remained there for some time after obtaining his doctorate. In 1865, Clémenceau came to America, virtually an exile from Imperial France. He had just completed a term in prison for shouting "*Vive la République*" in the streets of Paris. Upon his arrival in America, he attempted to build up a medical practice in New York, but he was compelled to turn to school teaching to earn his livelihood. In a school for girls in Stamford, Connecticut, he gave instruction in the French language and literature for two and one-half years. In 1869, he married an American girl, Mary Plummer, one of his pupils. Later in his life, he married again, this time a Parisienne.

At the outbreak of the Franco-Prussian War in 1870, Clémenceau borrowed his passage money from a fellow practitioner of medicine and went to Paris, arriving just in time to witness the downfall of Napoleon III and the rise of the third republic. He was appointed Mayor of the Montmartre District, and within a year he had obtained at seat in the National Chamber of Deputies. From that time on, Clémenceau became more and more powerful in French political life. He has twice been Premier of France, and has lived to have gratified his wish, the he "could live to see the end of the war."

SOCIAL RECONSTRUCTION.

A RECENT pamphlet on *Social Reconstruction*, issued by the National Catholic War Council, presents a general review of the problems involved in the social reconstruction following the war, and surveys the remedies which may safeguard peace and social justice. The plans formulated by the British and American Labor Parties, by the British Quaker Employers, and by the representatives of the American employing class give evidence of the magnitude of the problem with which the world is confronted. It is probable that the changes which are to come will not affect the United States so profoundly as they will affect European peoples, and that our reconstruction program will be somewhat less radical than may be adopted in other countries. The industrial replacement of discharged soldiers and sailors, the readjustment of women

in industry, the regulation of wages, housing projects for the working classes, a reduction in the cost of living, social insurance, the participation of labor in industrial management, vocational training, and child labor are some of the aspects of social reconstruction outlined in this pamphlet, and briefly discussed both from the point of view of present defects and of suggested reform.

THE AMENDED HARRISON ACT.

IN another column of this issue of the JOURNAL we publish for the benefit of physicians the text of the Harrison Act as amended by the War Revenue Act of 1919. Nothing more is attempted than to give the Act of Congress approved December 17, 1914, as amended by the War Revenue Act, now (Feb. 18, 1919) awaiting the President's approval.

Attention is directed to the new schedule of registration fees; to the definitions of the terms importers, manufacturers, producers, wholesale dealers, etc., found in Section 1; also to the stamp tax provisions found in Section 1. The whole of Section 1 should be read over carefully and repeatedly. That part of Section 6 which begins with the italicized words, "*Provided, further,*" is new and requires particular attention. Section 1008 is new legislation, and only incidentally a part of the Harrison Act. The other sections are the same as in the original act.

This matter concerns physicians, and it is important that members of the profession take careful notice of the amendments to the Harrison Act.

RECORD SYSTEM FOR HOSPITAL SERVICE.

THE American College of Surgeons has recently issued two bulletins (Vol. IV., Nos. 1 and 2) describing the preparation and use of an adequate record system for hospital service. The purpose of these pamphlets is to bring hospitals to a realization of the important relation between case records and the success of the hospital. Records serve both as a test of medical honesty and as a means of minimizing errors in clinical practice. Bulletin No. 1 gives a detailed

explanation of the record forms which are published in Bulletin No. 2. Suggestions in the use of summary cards, for recording personal histories and physical examinations, charts for reporting conditions of the eye, ear, nose, and throat, and operative, pregnancy, labor, progress, and treatment records are simple and complete, and should be helpful in hospitals.

FORTY YEARS OF PROGRESS IMPERILED.

IN 1879, when General Benjamin Butler was Governor, a Board of Health, Lunacy, and Charity was constituted. Gradually as the people of the Commonwealth came to realize that these public charges could not advantageously be handled by a single common agency, this board was first divided into two and later into three boards. Since then, as every one must realize, the problems of health, charity, and mental diseases have vastly multiplied and enlarged. Experts and specialists have been developed in each of these departments to the great advantage of the public.

Today it is proposed to turn back to the crude organization of Governor Butler's time and unite under one head the Bureau of Prisons, the State Board of Charity, and the Commission on Mental Diseases. Last year the Commission on Mental Diseases was given nearly \$7,000,000, or nearly one-fifth of the total appropriations of the State. It cared, in its institutions alone, not counting the thousands of cases seen in out-patient departments, for 19,100 cases, or one case for every 201 of the population during the year 1917. The proposed new Commission would be given approximately \$11,000,000, or about one-third of the State's appropriations.

The arguments advanced by the legislative committeemen are two. First.—The Commission on Mental Diseases has been doing a big job satisfactorily; why not make the job bigger and have the penal and charitable institutions equally well handled? Second.—The 19th amendment to the State Constitution recently adopted compels the consolidation of the 107 odd existing commissions into not more than twenty. The Bureau of Prisons, the State Board of Charity, and the Commission on Men-

tal Diseases have interlocking problems, why not bunch them?

The physicians of Massachusetts are perhaps more interested in the problems of mental disease, or mental hygiene, than in the problems of the charitable and penal institutions. Whatever progress the future offers for the amelioration of the burden which the Commonwealth now bears in caring for the insane, feeble-minded epileptic, and mentally sick, lies primarily in the field of preventive medicine. Preventive medicine in mental disease or mental hygiene demands the early recognition and treatment of mental symptoms. Whatever helps to remove from the minds of the people the distrust and dread regarding mental hospitals, and brings incipient mental patients early and voluntarily to the hospitals for treatment is to be furthered, and assuredly will lighten the burdens of the Commonwealth and of its citizens. But any project, whether in the field of dollars or executive coördination, that heightens the distrust and dread of the people as to the care offered by the State Mental Hospitals, and delays the coming of incipient and remediable cases to these hospitals for treatment, must necessarily add to the present and future burdens, both financial and social, that must be borne by the Commonwealth and its citizens.

Can we, as physicians, be content to remain passive while our well-intentioned but poorly-informed legislators in an attempt to go forward are heading backward to the cruder conditions of forty years ago? Can we by our silence approve of such an unfortunate and trouble-breeding mixture of problems of education, custody, and health? Can we say to our legislators: "Go ahead and increase your chance of being shot at by some ill-balanced mental cases that might have been recognized at the out-patient department of the Psychopathic Hospital, if you had not damned that place by grouping it with the places for criminals and paupers. Increase the chance for property damage, suicide, and homicide, by early mental cases if you think you can better coördinate the State institutions."

Can we say to the returning soldiers of Massachusetts, suffering from shell-shock, needing and deserving the best of expert care in our mental hospitals: "Welcome Home! We have a brand new commission for you. It takes care of all the criminals and all the paupers,

but it can find time somehow to look out for you, too. If you need to go to jail a sub-commissioner can arrange for that; if you are a pauper another subcommissioner can attend to that; if you are sick and nervously exhausted, that can be fixed somehow. Welcome Home to your grateful Commonwealth!"

MEDICAL NOTES.

HEALTH OF TROOPS IN CAMPS.—During the week ending February 14, there were no epidemics reported in home camps. There were a few cases of influenza, but these were mild in form and showed an improvement over the preceding week. Only two cases of influenza were reported.

A report from the Expeditionary Forces in Siberia indicates that the health of the soldiers in these regions is excellent.

COLUMBIA UNIVERSITY AND THE PRESBYTERIAN HOSPITAL.—In 1911 an alliance was formed between Columbia University and the Presbyterian Hospital, New York, for the purpose of forming in that city a great medical centre. As the university has been unable to obtain the money needed for its share of the buildings and has rejected the plans proposed as the condition of an endowment offered by the Rockefeller Foundation, the alliance has been dissolved.

ST. BARTHOLOMEW'S HOSPITAL.—A History of St. Bartholomew's Hospital, by Dr. Norman Moore, published recently, shows the progress of medical knowledge in London from the twelfth century to the present day. The hospital was founded by Rahere, whose successor was Thomas of St. Osyth. The period from Henry I. to Richard II. shows the early development of medical science. The work of John Cok, the writer of the hospital cartulary, explains the mediaeval estate of the hospital and its transactions with various ancient foundations. In the reign of Henry VIII., the ledgers and journals, which continue to the present day, first appeared. The Elizabethan physicians, Harvey and his successors, and subsequent surgeons form, by their connection with St. Bartholomew's Hospital, chapters in the history of medical progress.

INFLUENZA AND PNEUMONIA IN THE UNITED STATES.—Reports from State health officers for

the week ending February 1, 1919, indicate that the number of cases of influenza was decreasing at that time in most parts of the United States. In California and Louisiana, where extensive recrudescences of the disease occurred in January, there was a notable decrease in the number of cases reported. As compared with the preceeding week, reductions in the number of cases were reported from Alabama, Arkansas, California, Illinois, Iowa, Kansas, Louisiana, Maine, New Jersey, Oklahoma, Oregon, Vermont, and Virginia. Slight increases were reported from Connecticut, Florida, Indiana, and North Carolina.

Reports from the zones around army camps also show in general a reduction in the number of cases reported.

A record of deaths due to influenza and pneumonia (all forms) from September 8, 1918, to January 25, 1919, which has been published in the Public Health Report for February 7, 1919, gives a total of 125,562 deaths for forty-six large cities in the United States. The greatest number of deaths occurred in New York City, where 27,362 deaths have been recorded. Philadelphia has registered 14,198; Chicago, 12,400; and Boston, 5,771 deaths.

EARLY ARYAN SCIENCE.—An interesting article describing early Aryan science has appeared recently in the *British Medical Journal*. The achievement of the ancient Hindus in science is a source of wonder and admiration to the modern mind. It is probable that the Chinese, Greeks, and Arabians are all indebted to the Hindus for the knowledge which has been acquired from them. Of course it is not improbable that both Greeks and Hindus derived much of their science from a common prehistoric Aryan source; the Arabians, undoubtedly, owe a great deal to both Greeks and Hindus, and the Chinese probably interchanged with the Indians.

The early medical researches of the Hindus were recorded in the *Ayurveda*, much of which survives in the writings of Charaka and Susruta of much later date. The acquirements, medical and surgical, chronicled by these authors, were perpetuated, practically unchanged, by oral tradition, until the invasion of India by Western nations, especially by the British, introduced the doctrines and methods of rational and progressive medical science.

The Hindu mind is prone to abstraction, speculation, and mythology, and though much

exact observation had been made in anatomy by the dissection of animals and men, good descriptions of diseases recorded, many mineral and vegetable drugs empirically discovered and employed, and rough surgical operations practised with rough appliances—still the three supposititious humors, *vayu*, *petta*, and *kafa* (wind, bile, and phlegm), dominated both physiology, pathology, and therapeutics, just as astrology governed and debased astronomy, and alchemy, chemistry.

An interesting book on this subject has recently been published: *Hindu Achievement in Exact Science*, by Benoy Eumar Sarkar.

RESERVE OF THE UNITED STATES PUBLIC HEALTH SERVICE.—A reserve of the Public Health Service will be maintained for use in time of national emergency. Physicians, sanitary engineers, epidemiologists, pathologists, zoologists, pharmacologists, bacteriologists, chemists, sanitarians, and others whose qualifications, training, and experience are such as would enable them to perform the duties of the Public Health Service, may become members. The President alone is authorized to appoint and commission as officers in the Reserve citizens who, by examination, have proven themselves qualified, physically, mentally, and morally, to render this service. The grades in which officers are appointed in the Reserve are determined by the qualifications, training, and experience in their special lines of work which they reveal in the examination.

The duties which Reserve officers may be required to perform are those of the Public Health Service, and are broad and varied in character. They include the care of patients in hospitals under the control of the service, the examination of arriving alien immigrants at ports of entry, service at sea on board coast guard cutters, work in connection with the conduct of national quarantine stations, the prosecution of campaigns against epidemic diseases, the carrying out of research work in the hygienic laboratory and in the field, the study of various factors in the protection of the public health in all parts of the nation, and coöperation with State and local health authorities.

In order that Reserve officers may receive training which will familiarize them with the work of the Public Health Service and prepare them for the duties to which they may be assigned in time of emergency, it is contem-

plated, in so far as practicable, to order them as on active duty, for a period not exceeding one month each year, to a school of training in an approved institution or station located convenient to the districts in which they reside. The training thus gained will also prove of great value to the officers in their regular work.

By holding a commission in the Reserve of the Public Health Service an officer renders himself liable to considerable personal sacrifice, but gains the opportunity to perform a patriotic duty by holding himself in readiness to serve whenever and wherever called. The experience acquired while on active duty and the association with other officers, many of whom are experts in their special lines of work, are advantages which compensate in some degree for the temporary character of the duty.

CONTROL OF VENEREAL DISEASE.—The United States Public Health Service has appealed to every member of the medical profession to cooperate in the control of venereal disease. In a letter issued to the physicians of the country, the following statements have been made:

"There is danger of an alarming spread of venereal disease during the reconstruction period. Prior to demobilization, the tense morale of the fighting forces is bound to relax. When mustered out, the men will return to conditions in civilian life which have been responsible for venereal disease. Prompt measures must be taken to meet the situation.

"Among the striking things disclosed by Army statistics is the value of proper methods of control as developed in the treatment of venereal cases in the service. The same methods of control will prove equally effective when applied to venereal cases among civilians."

A bulletin accompanying this letter presents the testimony of the Army, emphasizes the importance of maintaining industrial efficiency, and urges physicians to recognize their responsibility.

"From the time the United States entered the war in April, 1917, to September, 1918, the loss to the Army from venereal disease represented 2,295,000 days of service.

"Immediately following the declaration of war, the Army Medical Department organized to cope with venereal disease, and one of the first points emphasized by its Surgeon General was that each individual case must be treated under competent medical supervision until cured. He laid special emphasis on two points:

"1. The ineffectiveness of self-treatment by the use of simple or patent remedies.

"2. The danger of quack doctors, who advertise to treat so-called private diseases.

"Nineteen months of war have shown conclusively the value of proper methods of treating venereal cases in the Army.

"For the protection of the fighting men as they return home, and to maintain maximum industrial efficiency, venereal disease among the civilian population must be kept under control. There is the same necessity for proper methods of treatment as existed in the service.

"Physicians have a large share in the responsibility of protecting the nation in this emergency, by giving their best scientific attention to individual venereal disease cases. Industry does not have a nation-wide medical organization similar to that of the Army. The responsibility rests on the individual physician.

"Each member of the medical profession should understand the seriousness of statements frequently made that a majority of physicians refuse to treat venereal diseases, and that many of those who do treat them are careless in their methods of treatment.

"This is probably one reason for the continued spread and existence of venereal disease, for which the medical profession must assume responsibility. As a result of the refusal by a large part of the profession to give the problem proper study and attention, venereal diseases have become a headliner for quackery and self-treatment, neither of which is safe or effective.

"Venereal disease is a scourge which menaces the industrial efficiency of the nation, and the United States Public Health Service believes that physicians should understand the seriousness of the situation and their responsibilities in meeting it.

"Thousands of retail druggists are responding to the request of the Government that they discontinue the sale of remedies for the self-treatment of venereal disease. They have agreed to direct customers to competent physicians or venereal clinics.

"The Government asks each member of the medical profession what he is going to do in this emergency. Will each venereal case be given the care and attention which it demands as a serious menace to the health and efficiency of the community, or will quackery and ineffective self-treatment be permitted to help keep alive the sources of venereal disease infection?

"The answer of the medical profession to these questions will determine largely whether venereal diseases among the civilian population are to be brought under control."

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending February 22, 1919, the number of deaths reported was 275 against 298 last year, with a rate of 18.01 against 19.81 last

year. There were 45 deaths under one year of age against 50 last year.

The number of cases of principal reportable diseases were: Diphtheria, 51; scarlet fever, 40; measles, 13; whooping cough, 11; typhoid fever, 2; tuberculosis, 58.

Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 1; typhoid fever, 1; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever, 1; typhoid fever, 2; tuberculosis, 27.

Included in the above were the following non-residents: Diphtheria, 1; typhoid fever, 1; tuberculosis, 3.

Influenza cases, 250; influenza deaths, 32, of which three were non-residents.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—On February 18, 52 new cases of influenza, with 6 deaths, and 9 cases of pneumonia, with 9 deaths, were reported to the Boston Health Department. On February 19, there were reported 45 cases of influenza, with 4 deaths, and 9 pneumonia cases, with 5 deaths. On February 21, 28 cases of influenza, with 1 death, and 3 cases of pneumonia, with 9 deaths, were reported.

HOSPITAL WARD AT WOMEN'S REFORMATORY.

—A fire in the Women's Reformatory at Sherborn resulted in a loss of approximately \$5,000. The nurses and matrons removed to places of safety thirty patients in the hospital ward.

QUINCY HOSPITAL FIRE.—A fire in the administration building of the Quincy City Hospital caused a damage of \$1,000. The fire did not spread to the wards, however, in which there were fifty-two patients. Twenty-five nurses and physicians were ready to remove the patients, but this was not necessary.

RETURN OF COLONEL HARVEY CUSHING.—Colonel Harvey Cushing, director of the United States Army Base Hospital No. 5, has returned home, after completing two years of service abroad. Colonel Cushing returned on the *Canopic*, which left Brest on February 8.

Base Hospital No. 5 was composed of doctors and nurses from the Peter Bent Brigham Hospital. They left Boston on May 7, 1917, for Fort Hamilton, N. Y., and subsequently sailed for France. This unit is sometimes called the

"Harvard Unit," a title which should be reserved for the original Harvard Unit, which sailed for France nearly four years ago. In a previous issue of the JOURNAL it was erroneously stated that Colonel Harvey Cushing was at one time at the head of the Harvard Unit, with which he had no connection at any time.

Colonel Cushing's service with the Peter Bent Brigham Hospital Unit has won for him a high rank among military surgeons in the fighting area: He made many successful operations on British and American soldiers at Messines Ridge, Chateau-Thierry, St. Mihiel, and on the Argonne front. His achievement resulted in his appointment as chief neurological surgeon of the American Expeditionary Forces.

Obituarica.

SIR HERMANN WEBER, M.D., F.R.C.P.

SIR HERMANN WEBER, M.D., F.R.C.P., died at his residence in London on November 11, in his ninety-fifth year. An account of his life and achievement has appeared recently in the *British Medical Journal*.

Sir Hermann Weber was born on December 30, 1823, the son of a German father and an Italian mother. His early years were spent on the farms successively held by his father in Bavaria and Hesse-Cassel. He went to school at Fulda and received his medical education first at Marburg and afterwards at Bonn, where he graduated M.D. in 1848. His desire to read Shakespeare in the original led him to study the English language, and he was therefore prepared to accept the post of house-physician at the German Hospital, Dalston, to which he afterwards became physician and consulting physician. He desired to remain in England, and in 1854 married an English woman.

He determined to practise as a physician in London, and after a period of study at Guy's Hospital he became a member of the Royal College of Physicians in 1855. The position he had already obtained is shown by the fact that he was elected a Fellow four years later. He was the oldest surviving Fellow of the College. Much of his success, both as a physician and as a member of the profession in London, was due to his extraordinary charm of manner; no one could be in his company for even a few

minutes without coming under the spell. Among his friends in the early days in London were Addison, Edmund Parkes, Wilson Fox, and Hilton Fagge. His affection and admiration for Parkes led him in 1895 to present to the College a sum of £3,000 to found a prize to be awarded every third year to the author of the best essay upon some subject connected with the etiology, prevention, pathology, or treatment of tuberculosis. The prize, appropriately named the Weber-Parkes Prize, has been awarded on five occasions.

Hermann Weber was particularly interested in the treatment of consumption, and he was among the first to advise patients to go to Switzerland for the winter months. He spent many of his holidays in the Swiss, Tyrolean, and Italian Alps, and was a member of the Alpine Club. In 1885 he gave the Croonian Lectures before the Royal College of Physicians on the hygienic and climatic treatment of phthisis, and contributed several articles on related subjects to Quain's Dictionary and Albutt and Rolleston's System of Medicine. He placed his knowledge of health resorts at the disposal of the profession in a volume entitled the Mineral Waters and Health Resorts of Europe, afterwards replaced by a volume entitled Climatotherapy and Balneotherapy, written in association with his son, Dr. F. Parkes Weber.

Hermann Weber received the honor of knighthood in 1899. He was a censor of the College of Physicians in 1879-80; he was consulting physician to the Royal National Hospital for Consumption at Ventnor, to the North London Consumption Hospital, to the German Hospital, and a member of the consulting committee of King Edward VII Sanatorium; he was also an honorary or corresponding member of a large number of learned societies.

HERBERT DOUGLAS TAYLOR, M.D.

THE death of Lieutenant Herbert Douglas Taylor, M.C., U. S. Army, is recorded in *Science* for October 25, 1918.

Dr. Taylor, though but 30 years of age at his death, had made many important studies and had published several papers relating to malignant tumors, tuberculosis, and bio-chemical problems involved in the safer and more effective use of antiseptics in military surgery. A graduate of St. John's College, Annapolis, Maryland, he received his medical degree at the

Johns Hopkins Hospital in 1914. During the following three and one-half years he was associate in pathology and bacteriology at the Rockefeller Institute for Medical Research.

Soon after the United States entered the war, Dr. Taylor was commissioned as first lieutenant and gave generously of his time and energy in order to convey to other medical officers instruction in the Institute Laboratory Courses at the War Demonstration Hospital. He was one of a group of young workers at the Institute who have made great personal sacrifices in the line of duty, and it was while carrying on this work at the Hospital that he apparently became infected with influenza, with pneumonia coming as a rapid sequel. He died on the third day of his illness.

A master in those phases of scientific medicine in which he was interested, he was also a man of high ideals and of boundless enthusiasm, and was an inspiring comrade.

NOTICE.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.—The American Board for Ophthalmic Examinations will hold its next examination at the Wills Eye Hospital, Philadelphia, June 6 and 7, 1919.

The examination next June will be the fifth to be conducted by the Board. This Board is composed of representatives of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-laryngology. By arrangement with the American College of Surgeons, the Board has become the Ophthalmic Credentials Committee of the College, and conducts the examinations of the ophthalmic candidates for Fellowship in the College.

For a certificate of this Board, the examination in ophthalmology consists of: first, case-records; second, written examinations; and third, clinical laboratory and oral examinations.

a. Candidates in ophthalmology are required to submit twenty-five complete case records of which not more than ten should be descriptive of operations. These records should be of cases of ocular diseases and defects of varied character, including errors of refraction or muscle balance; external ocular diseases or diseases of the uveal tract or retina, or of the optic nerve, or glaucoma. The reports should show especially the reasons for the diagnosis, and for the operative treatment and the technique of operations.

b. The written examination will test the candidate's knowledge of the underlying principles of the science of ophthalmology, including anatomy, embryology, physiology, physiologic optics, pathology, relations of the eye to the other organs and diseases.

c. The oral examination will include:

The external examination of the eye.

Ophthalmoscopy.

Measurements of errors or refraction.

Testing of the ocular movements and fields of vision.

Relations of ocular conditions to diseases of other parts of the body and their treatment.

Laboratory examination in histology, pathology, and bacteriology of the eye.

Further information may be had upon request from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Illinois.

The Boston Medical and Surgical Journal

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INFLUENZA EPIDEMIC AT CAMP MACARTHUR: ETIOLOGY, BACTERIOLOGY, PATHOLOGY, AND SPECIFIC THERAPY.*

BY LEON S. MEDALIA, M.D., BOSTON, MAJOR, M.C., U. S. ARMY.

Chief of Laboratory Service, Base Hospital, Camp MacArthur.

ETIOLOGY.

THE weather conditions when the epidemic struck us were unsurpassed: no rain, not windy, fair, and warm. The climatic conditions therefore, do not seem to have had any influence over the spread of the infection. As to congestion, that too did not seem to have been a necessary element in the spread of the disease. The weather being as already stated, as good as one could wish for, the troops occupying tents certainly had plenty of open air, both during the day and at night; nor was there any congestion of the tents occupied. As to the relation of pre-existing "colds" or catarrhal conditions, that too in our epidemic, played a very small part.

The disease, judging from the epidemic as we saw it here, seems to be highly contagious and

spreads rapidly from individual to individual (probably by means of sputum droplets in speaking, coughing, or sneezing) in spite of good weather, lack of congestion, and plenty of fresh air. Nor does age have much to do with it—practically all our cases were in young, robust adults.

BACTERIOLOGY.

a. *Influenza*. An examination of the sputum of the very first cases that appeared in this camp demonstrated the abundance of *B. influenzae* in the sputum and the ease with which it could be found in direct smears. Sputum smears were made, dried, fixed, and stained by a weak solution of carbol fuchsin (carbol fuchsin 1, water 4 parts). The influenza bacilli were found in clumps varying in size. These clumps were very abundant in the vast majority of the cases that were positive. The clumps when stained by Gram's method of staining were found to consist of Gram-negative ovoid, very small bacilli agreeing in every respect with the classical description of the Pfeiffer bacillus, mixed with numerous Gram-positive cocci and diplococci.

The ease with which the influenza bacillus was demonstrated in the direct smears of the sputum made us hopeful in the beginning of being able to control the spread of the disease by isolating tent-mates of each case as it appeared; to have these contacts sent to the laboratory and

* This work was carried out with the assistance of Lieuts. E. M. Rheinheimer R. J. Haws, and David O. Spriestersbach, and the laboratory technicians.

have their sputum examined, and if found positive, to isolate and treat them as carriers, while the negative contacts were to be released—in short, to handle them similarly to the handling of the diphtheria contacts.

This was carried out in 7 squads, from 5 to 8 men each, a total of 44 men, 38 of whom were found negative and 6 positive. It was soon realized, however, that the contagiousness and the spread of this infection is so rapid that the procedure became impracticable and had to be abandoned. The examination of the sputum, however, was made the basis of diagnosis of influenza in all cases that were sent to the Base Hospital as influenza "suspects."

Table I shows the result of sputum examinations of 2279 influenza "suspects" that came in to the Base Hospital. Cases with negative laboratory findings were discharged when that was found possible clinically. The practicability of sputum smears as an aid in diagnosis was amply demonstrated in this series of examinations.

TABLE I.

RESULTS OF SPUTUM EXAMINATIONS FOR B. INFLUENZAE IN CASES SENT IN TO THE BASE HOSPITAL AS INFLUENZA "SUSPECTS."

DATE 1918.	TOTAL EXAMINED.	POSITIVE No.	POSITIVE Pct.	NEGATIVE No.	NEGATIVE Pct.
Sept. 26	3	2	66.6%	1	33.3%
Sept. 27	2	2	100.0%		
Sept. 29	20	12	41.4%	17	58.6%
Sept. 30	28	19	67.8%	9	32.2%
Oct. 1	84	45	53.5%	39	46.5%
Oct. 2	52	42	80.7%	10	19.3%
Oct. 3	87	73	83.9%	14	16.1%
Oct. 4	203	173	85.2%	30	14.6%
Oct. 5	106	91	85.8%	15	14.2%
Oct. 6	65	63	96.9%	2	3.1%
Oct. 7	78	67	87.1%	11	12.9%
Oct. 8	198	166	83.8%	32	16.2%
Oct. 9	233	169	72.5%	64	27.5%
Oct. 10	118	95	80.5%	23	19.5%
Oct. 11	169	145	85.8%	24	14.2%
Oct. 12	138	100	72.5%	38	27.5%
Oct. 13	104	65	62.5%	39	37.5%
Oct. 14	130	116	89.2%	14	10.8%
Oct. 15	78	62	79.5%	16	20.5%
Oct. 16	77	44	57.2%	33	42.8%
Oct. 17	98	75	76.5%	23	23.5%
Oct. 18	53	32	60.3%	21	39.7%
Oct. 19	53	32	60.3%	21	39.7%
Oct. 20	50	33	66.0%	17	34.0%
Oct. 21	4	4	100.0%		
Oct. 22	19	10	52.6%	9	47.4%
Oct. 23	11	9	81.8%	2	18.2%
Oct. 24	1	1	100.0%		
Oct. 25	4	2	50.0%	2	50.0%
Oct. 26	0	0			
Oct. 27	0	0			
Oct. 28	4	3	75.0%	1	25.0%
Oct. 29	0	0			
2279	1752	768	76.8%	927	23.1%

pneumococci and streptococci, and for the presence of pus cells. Thus in 1613 sputums that were found positive to B. influenzae, 861 or 53.3%, showed the presence of the pneumococci; 148, or 9%, streptococci. Out of the 552 sputums negative to B. influenzae, 296, or 53.6%, showed the presence of pneumococci; 26, or 4.7%, streptococci. The large number of pneumococci in both the positive and negative influenza sputums suggest the ever presence of this organism generally, and explains the reason for our finding this organism in practically all the bronchopneumonia cases complicating the influenza. The low percentage of positive findings of the streptococcus, in both those that were positive to B. influenzae and those that were negative, explains our lack of finding this organism in the broncho-pneumonia cases. It also demonstrates the comparative freedom from this organism generally of the troops in this camp during this epidemic.

Cultures were obtained in a number of cases, that showed positive sputums early in the disease, from the posterior nares and tonsils. These were also found culturally positive to B. influenzae.

It would seem fair to conclude from the foregoing that the sputum and mucous membranes of the upper respiratory tract contained the B. influenzae in abundance. The sputum droplets in speaking, coughing, and sneezing were probably the largest, if not the only, means of conveyance of these organisms from individual to individual and the most important etiologic factor.

b. *Influenza Broncho-pneumonia*. By far the most important problem from a mortality standpoint we had to deal with was the accompanying broncho-pneumonia.

The type determination was done in 445 cases of this type of pneumonia with the following results: Type I, 1 case; type IIa, 15 cases; type II, 8 cases; type III, 5 cases; type IV, 378 cases; undetermined (bile insoluble) 38 cases. The other organisms, beside the pneumococcus, noted in direct smears in 405 sputums on which the type determination was done, were B. influenzae, 54%; streptococcus, 15%. The associated organisms found in the same sputums culturally were B. influenzae, 10.6%; streptococcus, 15.2%; staphylococcus and B. mucosus capsulatus, 20% each. The small percentage of positive findings of B. influenzae in the sputum culturally as compared to the direct smears is due in part to the hardships encountered in cultivating this organ-

The sputums were also studied for the presence of associated organisms, more especially the

ism in culture media used in routine for the type determination. The findings are characteristic of the bacteriology of the sputum in this disease. The very large percentage (86%) of type IV in these broncho-pneumonia cases well illustrates the difference between secondary pneumonias and primary, such as lobar.

Blood cultures were taken on 233 cases. The usual technique was followed. Both agar plates and broth cultures were obtained in each case. The plates were made with 2 to 3 c.c. of blood to the plate while 10 c.c. were used for the broth cultures. 31 of the 34 positive cultures were pneumococci, 20 of these type undetermined (being bile insoluble), and one of the 20 also showed *B. influenzae*, 7 showed type IV, and 4 type IIa. Five of the seven with type IV died. Four of the 20 pneumococcus type undetermined died. (That one that showed *B. influenzae* mixed with pneumococci died.) None of those that showed the staphylococcus died. The large number of pneumococci found to be bile insoluble in this series suggests that not all the pneumococci are bile soluble.*

The finding of the *B. influenzae* in the blood cultures during life is worth calling special attention to. In one case the *B. influenzae* was found in pure culture, while in another it was mixed with pneumococcus. In both these cases the broth cultures were the only ones in which the organisms were found—not in the plates. Table II gives the findings of the blood cultures in detail.

The mortality of the 198 negative cultures is 16%, while of the 34 positive it is 23%. In 12 of the positive cultures growth was present in

broth only, none in the plates. The negative cultures were kept under observation for 5 days, and quite a number showed growth only after the 3rd or 4th days.

Since the blood cultures were taken at all stages of the disease, but always before convalescence had set in, the findings under these circumstances could therefore be considered characteristic of this disease even though the cultures were not repeated excepting in a few of the cases.

NECROPSY FINDINGS.

During this epidemic sixty-one consecutive autopsies were performed on influenza-pneumonia cases, beginning with the first case that died of this disease on October 3, 1918.

Bacteriology. Cultures were taken at time of autopsy from the heart, spleen, both pleural cavities, both lungs, and from the brain in case of meningitis. Culture media used was Loeffler's blood serum, glucose agar and blood agar. Direct smears were also made from the pleural cavities and from both lungs. Table III gives in detail the bacteriological findings in direct smears of these necropsies; out of 58 cases examined of right and left lungs the *B. influenzae* was found in 79% of each. The pneumococcus was found in 97% and 93% respectively, while the streptococcus was found in 12% and 9% respectively.

Direct smears of the right and left pleurae in 50 cases were examined; *B. influenzae* was found in 62% and 56% respectively; the pneumococcus in 78% and 68% respectively; the streptococcus in 2% and 4% respectively. In two cases of meningitis complicating the broncho-pneumonia, *B. influenzae* was found in both cases, 100%. One was mixed with pneumococcus.

TABLE II.
BLOOD CULTURES IN INFLUENZA-PNEUMONIA, AND INCIDENCE OF MORTALITY.

PNEUMO. TYPE.	No. cases.	No. OF COLONIES PER CC.				NEGATIVE 196 CASES.				
		Pct.	Min.	Max.	Dead.		Living.			
					No.	Pct.	No.	Pct.		
I	..	..	..	..	..	..	30	15.1%	168	84.8%
IIa	4	12.9%	32	34	..	..	..	..	..	..
II	..	..	..	..	..	..	..	..	..	..
III	..	..	..	..	..	..	..	..	..	..
IV	7	22.5%	2	6,618	5	14.7%	2	6.2%	..	..
Undetermined { bile insol.	20	64.6%	6	1,000	4	11.7%	16	47.0%	..	..
{ I mixed with B. Infl.										
B. Influenza	1	2.9%	in broth only			..	..	1	2.9%	..
Staph.	2	5.8%	274	960	..	..	2	5.8%	..	..

* A phenomenon was noted in connection with the bile solubility test which is worth recording. In two instances when the bacteria obtained in the broth were subcultured on solid media (Loeffler's blood serum) suspended in saline and then typed, it was found bile-soluble, while in the original broth culture it was found insoluble. The presence of the serum in the original blood-broth cultures probably interfered with the bile-solubility test.

TABLE III.
BACTERIOLOGICAL FINDINGS AT NECROPSY—DIRECT SMEARS.

	TOTAL NO. CASES.	B. INFLU.		PNEUMO- COCCI		STREPTO- COCCI		STAPHYLO- COCCI		MIC. CAT.		UNIDENTIFIED.		No. ORGANISMS.	
		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	Gm. Pos. B.	Gm. Neg. B.	No.	Pct.
Spleen	2	1	50%											1	50%
Right Lung. . .	58	46	79%	56	97%	7	12%	4	7%	1	2%	6	10%	3	5%
Left Lung. . . .	58	46	79%	54	93%	5	9%	7	12%	1	2%	5	9%	1	2%
Right Pleura. .	50	31	62%	39	78%	1	2%	4	8%			2	4%	6	12%
Left Pleura. . .	50	28	56%	34	68%	2	4%	3	6%			3	6%	2	4%

Table IV gives the result of cultural findings in 65 influenza-pneumonia necropsies (61 consecutive and 4 additional)—3 of which were complicated with meningitis. Thus out of the 65 autopsies in which the right and left lungs were cultured, 83% each showed the B. influenzae. The pneumococcus was found in 78% and 85% respectively. The hemolytic streptococcus in 6% and 5% respectively.

Of 62 cases in whom the right and left pleurae were cultured, the B. influenzae was found in 81% and 76% respectively. The pneumococcus in 77% and 74% respectively, while the hemolytic streptococcus was found in 5% each.

The high percentage (56%) of positive findings of the B. influenzae in the heart cultures, the spleen (56%), and brain (66%), as well as in the lungs and pleural cavities, is well worth calling attention to, in view of the controversies existing concerning the presence of the Pfeiffer bacillus in this pandemic. The low percentage of the streptococcus hemolyticus in these broncho-pneumonias as compared to the broncho-pneumonia of last year following measles, which were practically all due to the hemolytic streptococcus, is another point worth calling attention to.

The pneumococcus which was found in 57 of the 61 necropsies conformed to the following types: Type I, 3.5%; type IIa, 10.5%; type II, 5.5%; type IV, 63.2%; undetermined, 19.3%. The B. influenzae and the pneumococcus both in direct smears and in cultures were in some cases difficult to find, and required considerable search; both poor preparations and scanty growth were responsible for that. The Loeffler's

blood serum with its abundant water of condensation was found to be the best culture medium for the B. influenzae and the pneumococcus. The carrying along of body exudates onto the surface of the culture media is probably responsible to a great extent for the results obtained on this ordinary culture medium, since this same culture medium proved unsatisfactory for subcultures.

Tissues for histological specimens were obtained from all the autopsies. Paraffin sections were made from the lungs and spleen, stained by 1 to 20 carbol fuchsin for B. influenzae and by Gram-Weigert stain for the pneumococcus and associated Gram-positive organisms.

Sections from the lungs stained by Gram-Weigert and carbol fuchsin were examined in 64 cases (61 consecutive necropsies and 3 additional); 88% were found positive to B. influenzae and 68% positive to the pneumococcus. Sections from spleen were examined in 45 cases; 69% were found positive to B. influenzae and 42% positive to pneumococcus. The streptococcus was found only in 3 cases out of the 64—all in the lungs, none in the spleen. The staphylococcus in 8% of the lung cases. None in the spleen.

It must be stated that in a number of the cases it required considerable search to find the organisms in the tissue, especially was it true in the B. influenzae.

Thus the tissues as well as the cultures of the necropsy cases showed the presence of the B. influenzae and the pneumococcus as the predominating organism responsible for the disease.

TABLE IV.
BACTERIOLOGICAL FINDINGS AT NECROPSY—CULTURES.

		B. INFLUENZA		PNEUMO- COCCI		STREPT. HEMOL.		STREPT. VIRID.		DIPHTH. ERYS.		STAPH. ALBUS		STAPH. AUREUS		MICRO. CAT.		GM. POS. & GM. NEG. B.		No. GROWTH	
		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Brain	3	2	66%	2	66%	1	33%			1	33%	1	33%	1	33%			3	100%		
Heart	34	19	56%	15	44%	1	3%	1	3%	2	6%	1	3%					11	32%	5	15%
Spleen	36	19	53%	12	33%	1	3%			1	3%	1	3%	2	5%			9	25%	6	17%
Right Lung. . .	65	54	83%	54	78%	4	6%	3	5%	7	8%	7	11%	8	12%	1	2%	23	35%	2	3%
Left Lung. . . .	65	54	83%	55	85%	3	5%	3	5%	5	8%	7	11%	12	19%	2	3%	20	31%	1	1.5%
Right Pleura . .	62	50	81%	48	77%	3	5%	4	6%	3	5%	11	18%	9	15%			16	26%	1	1.6%
Left Pleura. . .	62	47	76%	46	74%	3	5%			4	6%	7	10%	5	8%			18	29%	3	5%

PATHOLOGICAL ANATOMY.

The majority of the 61 consecutive cases of influenza-pneumonia that came to necropsy were in the hospital from 3 to 7 days only, the disease lasting longer than seven days was the exception rather than the rule.

The type of pneumonias found in the 61 consecutive necropsies were: 56 or 92%, broncho-pneumonia, and only 5 cases, or 8%, were lobar, 4 bilateral and 1 unilateral. In over 75% of the cases, empyema or a bloody-sero-fibrino-purulent pleurisy was present—52% bilateral and 24% unilateral (Rt. 13%—Lt. 11%), 24% had no fluid.

The lung tissue in the majority of the cases was extensively involved, ballooned out, but not friable, having a dense tissue feel, as if filled with fluid exudate to its maximum capacity rather than with fibrin or cellular elements. The surface of the consolidated areas was of a dark red to a dark bluish red, and in the majority of the cases covered with a thin fibrinous exudate. In no case did it show the mat-like appearance of the post-measles broncho-pneumonia cases that we had last winter. The picture was that of a markedly congested organ. The consolidation was only rarely nodular or shot-like in feel, excepting in those of the lobes which showed beginning of the process; even here the unaffected parts would be crepitant or edematous, as the case may be, with a confluent patch posteriorly or centrally located.

There was only one case where the lungs presented the appearance of miliary tuberculosis; and another where the lungs were pinkish gray in color with shot-like nodules throughout and immediately under the pleural surface, giving the latter a granular appearance.

The outstanding feature of the pathological anatomy was the marked congestion. On cut section, dark fluid blood would escape from the consolidated areas as if under pressure. The surface of the cut section presented dark reddish gray areas with hemorrhagic or congested areas intervening. Distinct lobular consolidations could not be made out. In a few cases pin-point grayish purulent droplets would escape on pressure, but those were the exception. The case that did show shot-like feel presented on section a granular surface—grayish red raised areas, with lung tissues depressed and fairly dry in appearance. The lack of purulent exudate was the outstanding feature which sug-

gested a study of the leucocytosis in this condition to be referred to later.

The mucous lining of the bronchi and tracheae was bright red and inflamed but not markedly swollen. In a number of cases dark fluid blood, at times frothy, would escape from the nostrils and mouth on slight pressure of thorax while handling the body.

Histologically. The early cases, those showing nodular consolidations, presented a characteristic picture of terminal bronchiolitis, conforming in all respects to the text-book description of the same. Fibrin formation was found to be the exception. In the majority of the cases that showed the confluent type of involvement, vast areas of alveoli could be seen filled with a granular appearing coagulable substance, containing loose cellular elements of red and white cells—the so-called catarrhal pneumonia was the rule. Large hemorrhagic areas of alveoli filled with red cells were seen in the lung tissues of a number of cases. Areas suggesting infarcts were also encountered. The case that showed an abundance of leucocytic exudation was the exception rather than the rule.

The other organs in the 61 consecutive necropsies showed little pathologic changes. Not a single case of pericarditis or endocarditis was met with. The liver, as a rule, was congested and occasionally a case would show typical nutmeg liver, probably due to other causes rather than the broncho-pneumonia. The kidneys showed congestion and only in a rare instance was there parenchymatous changes. The spleen, too, did not show more than congestion, and fluid blood would escape on section. The same was true of the stomach and intestines—very little change, if any.

It is evident from the necropsy findings of these 61 consecutive cases that the disease, as it appeared in this camp, was primarily an upper respiratory infection, due to the *B. influenzae* and pneumococcus. The rapidity with which death occurred was probably responsible for the lack of pathologic changes in any of the other organs. This contention is well borne out by later necropsies on cases that were sick from 4 to 7 weeks in which complications such as otitis media and meningitis occurred; pericarditis and thick purulent empyemas were also found. In these cases the other organs too showed parenchymatous changes concomitant with the duration of the disease.

Leucocyte and Differential Count. In order

TABLE V.
LEUCOCYTE COUNT IN INFLUENZA-PNEUMONIA.

	0-5,000		5-10,000		10-15,000		15-20,000		20-25,000		25-30,000		30-35,000		72,000	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
No serum 86 cases.....	10	13%	32	37%	20	23%	13	15%	6	7%	4	4%	1	1%	0	0%
Serum given 138 cases...	7	5%	51	36%	48	35%	15	11%	9	7%	2	1%	5	4%	1	1%

TABLE VI.
INFLUENZA-PNEUMONIA.
Neutrophiles—Per Cent.

(No. Serum 86).	40-45		45-50		50-55		55-60		60-65		65-70		70-75		75-80		80-85		85-90		90-95	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
No serum..	0	0	5	6%	3	3%	9	10%	13	15%	16	18%	9	10%	12	13%	7	8%	10	11%	2	2%
Serum given	2	1%	6	4%	2	1%	11	8%	20	14%	26	19%	26	19%	26	19%	10	7%	5	3%	2	1%

Small Mononuclears.

	1-5		5-10		10-15		15-20		20-25		25-30		30-35		35-40		40-45		45-50	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
No serum..	4	4%	10	11%	6	6%	21	24%	17	19%	10	11%	11	12%	3	3%	3	3%	1	1%
Serum given	7	5%	10	7%	27	19%	59	28%	25	18%	16	11%	10	7%	0	0	2	1%	0	0

Large Mononuclears.

	0		1-5		5-10		10-15		15-20		20-25		25-30		No. Pct.	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
No serum..	5	5%	52	60%	22	25%	2	2%	3	3%	2	2%	0	0	0	0
Serum given	2	1%	61	44%	42	30%	24	17%	6	4%	0	0	1	7%	0	0

Transitionals.

	0		1-5		5-10	
	No.	Pct.	No.	Pct.	No.	Pct.
No serum...	27	31%	55	63%	4	4%
Serum given	32	23%	90	71%	14	10%

Eosinophiles.

	0		1-5		5-10	
	No.	Pct.	No.	Pct.	No.	Pct.
No serum...	61	70%	25	29%	0	0
Serum given	95	69%	40	29%	1	7%

to account for the lack of purulent changes in the pathologic picture of the lungs in these broncho-pneumonia cases, a study was made on 224 cases with reference to the leucocyte and differential counts. Table V shows the leucocyte count under two separate headings—those receiving the polyvalent antipneumococcus serum and those not receiving the serum. The fact that from 72% to 75% of the cases showed a leucocyte count below 15,000 fairly well explains the pathologic picture. The differential counts as found on Table VI show that 71% of the cases receiving serum had a neutrophile count between 60% and 80%, while in those not receiving serum only 56% had a neutrophile count between 60% and 80%. The differential count shows nothing unusual otherwise.

SPECIFIC THERAPY.

The following well illustrates the direct value of post mortem examinations. The first few cases that came to necropsy showed bacteriologically that we were dealing with a predominating type IV pneumococcus infection associated with the influenza. It was therefore suggested by the writer to the Chief of the Medical Service to

make use of the polyvalent antipneumococcus serum as a routine treatment in these pneumonias. This was followed out on a small scale. until on October 15, during the height of the epidemic, the laboratory was assigned by the Commanding Officer to do anaphylactic tests, desensitization, and administration of the serum in the pneumonia cases. The idea of Lt.-Col. French, the C.O., was to arrange for a systematic administration of the serum. Accordingly, we immediately organized 3 crews of 5 men each, consisting of 4 enlisted men and one medical officer to the crew.*

Atropin dissolved in sterile saline, and bottled, so that each c.c. would represent gr. 1/150, and adrenalin 1 to 1000 was ready at hand to administer in case any reaction followed the intravenous dose. All the solutions were prepared

* Enlisted men from the laboratory, familiar with the Schick test, were chosen to do the intradermal and subcutaneous inoculations, while the medical men attended to the intravenous inoculations and the serum reactions—one man giving $\frac{1}{2}$ c.c. of 1% serum in saline intradermally, followed by another injection of $\frac{1}{2}$ c.c. saline as a control; the second man, 10 to 15 minutes later, followed the first with 1 c.c. of straight serum subcutaneously; and one-half hour later the intravenous inoculations of 50 c.c. were begun. If no reaction followed the intradermal and subcutaneous tests, the Medical Officer would start the intravenous inoculation and turn it over to the third man of the crew, who would slowly introduce the serum. The fourth enlisted man was the scribe. He entered in the book the name, rank and organization of the patient and the time of each inoculation, and whether or no reaction followed. The Medical Officers in charge of these crews were Lieut. Albert Nash, Lieut. William W. Reed, Lieut. Nathan S. Schiff, and Captain Isidore Hirschman.

in sterile bottles and kept covered with rubber caps. The accompanying photograph illustrates the system. It shows the cart with everything needed on it. This cart could easily be wheeled about from ward to ward.



CART CONTAINS, FROM LEFT TO RIGHT: (1) Tr. iodine; (2) adrenalin (1-1000); (3) atropine solution (1 cc.=gr. 1-150); (4) sterile saline solution; (5) one per cent. serum in saline; (6) polyvalent anti-pneumococci serum; (7) water bath, 37° C. for serum; (8) cup with sterile 2 cc. syringes; (9) bucket with sterile 50 cc. syringes. In tray below, polyvalent serum.

Table VII gives the comparative mortality incidence in the influenza-pneumonia cases before and after serum treatment was begun. It would seem that there is but a slight difference between the two. However, by leaving out from the serum-treated cases those that received serum while in a moribund condition, as a last resort, as shown in Table VII, c, the difference in the mortality is quite marked—7.6% against 34% in favor of the serum-treated cases. It is evident to us that the polyvalent serum has been of value in the influenza-pneumonia cases met with in this camp. The value of the polyvalent pneumococcus serum treatment in lobar pneumonia cases at this base hospital was already pointed out and reported in J.A.M.A.³

The serum reactions in 236 cases treated through the laboratory were as follows: The intradermal test was found positive in 0.8% of the cases; the subcutaneous in 13.7%. Reactions following the intravenous inoculations were:—Following first dose, 9%; the second dose only 0.9%; none following 3d dose, while intermittent reactions (following first, but none following second, and none following third inoculation, etc.) 4.2%.

The very low percentage showing intradermal

TABLE VII.

(a) INFLUENZA-PNEUMONIA: COMPARATIVE MORTALITY BEFORE AND AFTER ADMINISTRATION OF POLYVALENT SERUM.

	TOTAL NUMBER OF CASES	MORTALITY	
		Number	Percentage
Before serum was begun	9/26 to 10/17	98	18.8%
After serum was begun	10/17 to 10/30	81	14.4%

(b) INFLUENZA-PNEUMONIA: COMPARATIVE MORTALITY BETWEEN PATIENTS HAVING SERUM AND THOSE NOT HAVING SERUM.

	TOTAL NUMBER OF CASES	MORTALITY	
		Number	Percentage
Serum given	311	47	15.1%
Serum not given	252	42	16.6%

(c) INFLUENZA-PNEUMONIA: COMPARATIVE MORTALITY BETWEEN CASES RECEIVING SERUM AND THOSE NOT RECEIVING SERUM.*

	TOTAL NUMBER OF CASES	MORTALITY	
		Number	Percentage
Serum given	286	22	7.6%
Serum not given	277	67	24.0%

* Cases given one or two doses of serum while in a moribund condition as a last resort, left out.

reactions is a good index to the true anaphylactic possibilities. We had no fatalities from serum anaphylaxis in this whole series; nor were there any serious consequences as a result of the serum as far as could be judged.

SUMMARY AND CONCLUSIONS.

1. The influenza bacillus was found in the epidemic in this camp to be the predominating organism. Out of 2279 sputums examined, 76.8% were found positive to this organism.

2. The pneumococcus was found the most important associated organism, being found in 53% of the total sputums examined.

3. The examination of contacts for influenza carriers as a means of prevention, though possible, was found impracticable. The spread of this disease is too rapid, and cannot be prevented by the examination of contacts and the isolation of carriers, unless perhaps in very small bodies of troops.

4. The type determination on 440 cases of influenza-pneumonia conformed to the following: Type I, 0.23%; type IIa, 3.4%; type II, 1.8%; type III, 1.1%; and type IV, 85.8%; undetermined, being bile insoluble, 8.6%. The B. influenzae was found in 54% of the broncho-pneumonia sputums that were typed.

5. Blood cultures made on 233 cases showed 34, or 14.6%, positive. 31 of the 34 positive, or 94% were found to be pneumococci. B. influenzae was found in 2 cases, or 5.8% (1 mixed with pneumococcus).

6. The high percentage of positive B. influ-

enzae found in the broncho-pneumonia cases that came to necropsy, in the lungs, pleural cavities, the heart, and spleen culturally, and in the stained tissue of the lungs and spleen is further evidence of the causative relation of *B. influenzae* to the broncho-pneumonia. It also demonstrates the frequency of the organism in the circulation.

7. The 61 consecutive necropsies showed 92% to be broncho-pneumonia; 8% lobar. Empyema (bloody-sero-fibrino-purulent) was a constant finding, being present in over 75% of the cases.

The foregoing is an account of the part played by the laboratory in this epidemic. Credit is due to the laboratory force,—officers, laboratory technicians, and enlisted personnel on duty, for the zeal and self-sacrifice shown by them all throughout this work.

REFERENCE.

¹ Medalia, L. S. M., and Schiff, Nathan: To appear in an early issue of the *Journal of the American Medical Association*.

PNEUMONIA AND EMPYEMA.

BY 1ST LIEUT. HORACE GRAY, MEDICAL CORPS,
U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens,
Mass.]

(Continued from page 307)

18. Clinical and X-Ray and Bacteriologic Diagnosis.

a. *The diagnosis of pneumonia* in one case was made clinically on the day of onset, from pleurisy pain, temperature, rapid respiration, râles and consolidation: while the x-ray showed no shadow on the third day of the disease, and only on the fifth day revealed a solid right lower lobe. This is remarkable, showing an exception to the rule that the radiologist can usually see consolidation before it can be heard, by the average medical man at least. For instance, several patients suspected by ward surgeons on basis of fever and rapid respiration were first positively diagnosed as pneumonia by the x-ray man. This alternating superiority of the latter with the clinician is most striking in rudimentary or abortive pneumonias. Holzknecht says (*Fortschritte a. d. Geb. der Röntgenstrahlen*, Hamburg, 1901, *Ergänzungsheft* 6, p. 82): "Radiologically it has been possible to approach an answer to the question whether certain clinically well recognized cases should be

viewed as central pneumonia, or as late or non-localizing pneumonia. In favor of the former view Lichtheim adduces his relatively frequent findings of extensive radiologic foci prior to clinical localization. He gives even one case with a radioscopic focus on the third day, but with no clinical consolidation, either then or at the crisis on the fifth day." Here, too, we have seen one such remarkable case. The patient was not prostrated, and furthermore, repeated percussion and auscultation of the area shown (twice) by the ray, failed to reveal at any time either broncho-vesicular breathing, or even râles on the cough test. Credit for presentation of this value of x-ray in early diagnosis of pneumonic consolidation seems due to von Jaksch, (von Jaksch, R., *Prager Med. Wch.*, 1903, 28, p. 495). In a later article (von Jaksch, R., and Rotky, H., "Die Pneumonie im Röntgenbilde," in *Fortschritte a. d. Gebiete der Röntgenstrahlen*, *Ergänzungsband* 19, Hamburg 1908, p. 18) is given detailed evidence by photographic reproductions of serial plates of pneumonia cases, taken sometimes on seven successive days, each accompanied by an anamnesis and bedside notes. For example: Figure 13, Case II, p. 4, shows still a distinct shadow of resolving pneumonia after dullness and râles have entirely disappeared. Later in the article, however, it is admitted that the skiagram cannot tell everything, and emphasis is put on the coöperation with the clinician, which has been so valuable to both parties in the study of pneumonia here. They give a striking example in Case IV., sputum positive for *T. B.*, which "is interesting because it shows definitely, that immediately following a demonstrated diplococcus infection came an infection or possible reinfection of the lung with tubercle bacilli. Only the combination of the physical with the roentgen examination, could make clear the case, and it is very interesting that from the skiagram one can almost determine both the fact of the superposition of *T. B.* with cavities and the time of it." This last statement as to the importance of the "combination of the roentgen with the physical examination" is shown by a case in our series. It was like "Case IV" in that tuberculosis played a part, but unlike it in that it redounded rather to the credit of the clinician. Reg. No. 12558, First Lieutenant in the Depot Brigade, age: 24. Service, 1 year, born in Mass., was admitted to hospital, April 17, 1918. Occupation: leather merchant. Family history and past history not

remarkable. P. I.: "tired from hard work, but felt well enough till forenoon, Monday, April 15, 1918, when he noticed headache, lame back, fever and chilly feelings. Early to bed the 15th and 16th, but malaise persists."

Subjective symptoms: No sore throat, nose cold, cough, pain in chest, typhoid inoculation, nausea, vomiting, constipation. P.E.: T 100.8, p. 100-R 18. Weight with clothes, 173; stated as usually 175. Few persistent crepitant râles, but only after cough test, opposite third and fourth v.s. in right interscapular space. Diagnosis: acute bronchitis, right. The next day, April 18, the râles had extended to the apex. The x-ray reported, "Right: dense shadows in hilus. Coarse mottling, first i.s. Thickened descending trunks. Mottling in apex. Left: Dense shadows in hilus. Thickened descending trunks. Interpretation: probable T. B., right upper lobe." On April 20, the râles were so abundant as to be easily heard without cough, and the ward surgeon after looking at the plate noted: "X-Ray reports strong indication of tuberculosis. Question personally whether this rather solid shadow might not be early or slowly developing pneumonic consolidation." On April 21, Major Joslin noted: Numerous fine moist almost crackling râles right apex, now heard even below angle of scapula; too easily heard and too rapidly extending to correspond with T. B." On April 22, the evening temperature which had varied from 100.8 to 100, became normal, and remained so thereafter. The morning temperature had risen to 99 only once, the morning after admission. The respirations stayed at 18 or 20 with two exceptions at 22. Sputum was obtained only after forced coughing, on April 20, 21, 22, 23 and 24th: all five were negative for tubercle. The W.B.C. on April 21 was 11,400 with a polymorphonuclear count of 74%. On April 25, a second x-ray showed, "Right: dense shadows in hilus. Coarse dense mottling first to third i.s. Coarse mottling in apex. Thickened descending trunks. Left: dense shadows in hilus. Coarse soft mottling in apex. Interpretation: T. B., right upper lobe, probable beginning T. B., left apex." On April 27, there were rare râles and only after cough, and none at all on April 30. A third plate showed on May 2, "chest practically clear." The next day he was returned to duty, with the final diagnosis: Pneumonia, lobar, right upper lobe, bacteriology unknown.

b. *Lobular pneumonia* has been a problem both for the stethoscope and the ray. It was emphasized by Jaksch when he said: "From the roentgenogram one *cannot distinguish* with certainty a *lobar pneumonia* from a *lobular*, since in the stage of resolution at a time when the physical signs of a lobar pneumonia are still present, frequently the x-ray signs indicate only lobular foci. As to the character of the pneumonic shadow, it is in the first place never dense and homogeneous, by which token it is clearly differentiated from the shadow of a pleural effusion or a lung tumor. . . . Furthermore, it is noteworthy that the shadow is always veil-like, though often with some denser and lighter spots, which produce that map-like or marbled appearance; the edge is never sharp." The following statement had been made by Holzknecht: "The usual small focal form of lobular or catarrhal pneumonia gives poor radioscopic results. Its focal shadows are most indistinct: small depth and washed out edges which merge into the surroundings. Larger confluent foci give clear pictures. . . . The variation observed in the depth and size of the shadows on repeated examinations I have attributed mainly to the changes in Roentgen tubes and in "Roentgenkritik." The same authority sums up much in the statement elsewhere: "The clinical and radiologic changes by no means keep step. In one case despite clearing of the shadow, there may be at the bedside no material change; in another case the reverse may be true, this latter being probably due to resolution of the parietal portion of the consolidation with consequent disappearance of the dullness."

Norris (Osler and McCrae's system, p. 247) begins in words nearly identical with those of Jaksch, and concludes with the following more conservative view as to x-ray marvels: "The x-ray does not enable us to distinguish definitely between lobar and lobular pneumonia or to make a diagnosis of consolidation before this is demonstrable by physical signs except in cases of a true central lesion."

c. Jaksch makes the further interesting statement, in view of our experiences reported in paragraphs 36 and 37: "That such a *shadow does not always justify the diagnosis of pneumonia*, is shown by a case observed in our clinic and described in detail by Vlah, A. (*Deutsche mediz. Wch.*, 1905, 31, 1532), in which the shadow was dependent on an atelectasis."

Vlach's article, the elaborate presentation of which with references is striking in a weekly, offers an interpretation of the atelectasis with which the medical men here have been inclined to agree despite the pathological verdict of no pneumonia (cf. par. 37). He says: "The cadaver's bilateral atelectasis of both lower lobes offered during life all the signs of double pneumonia, and it seems very probable that beside the severe purulent bronchitis there were rather large lobular foci of pneumonia in both lower lobes, at least during the earlier days of the stay in hospital."

This case was so fascinating to the Prague Professor that it formed the subject of a third paper (von Jaksch, R., *Berl. Klin. Wch.*, 1905, 12, p. 434), in which he says: "This observation forms a further proof that radiography shows the fact of a change but not the nature of the change in the lung tissue, whether infiltration, or exudate, or atelectasis."

In a recent "Comparison between clinical and roentgen findings" (Chapin, H. D., *Jour. A.M.A.*, May 11, 1918, 70, 1357), there was "substantial agreement" in 80% of the ninety-seven children. It was a tie between the radioscopic and clinical examinations, each indicating pneumonia in five cases missed by the other examination.

d. The *high diaphragm* on the affected side in pneumonia has been recently discussed in a note by L. W. Gorham (*Albany Medical Annals*, March, 1918).

e. *Big heart*. In 1901 Holzknrecht pointed out the "striking phenomenon that even in young people with negative cardiac histories, and even often in the first days of the disease, there is seen a considerable enlargement of the right part of the heart shadow, and a stronger and more distinct pulsation of the middle curve on the left border (arteria pulmonalis), which disappeared with resolution and in one case (three days after the crisis) went even before that. The first part of the phenomenon depends perhaps on acute dilation of the right heart, the second on the stronger filling of the pulmonary artery. It would be in the highest degree worth noting whether the auricular dilation is absent or vanishes early in those cases which later develop that most terrible complication, cardiac insufficiency." Major Davis's work at this hospital has demonstrated in this connection that in *many* cases the dilation is by no means transitory, and must be seriously con-

sidered in pneumonia convalescents as a routine before disposition to duty. This need not be necessarily done by the plate or the fluorescent screen, but may be done (and possibly more satisfactorily done,—experience will tell) by noting the effect of graded military exercises in a convalescent ward.

Enlarged hearts are also seen in Jaksch's illustrations, but do not seem to have excited his comment. Chapin is the earliest student yet traced to report: "In *most* of our cases the shadow of the heart was increased in pneumonia, especially in lobar. The enlargement was most marked in the right heart." Henchen's monograph ("Über die acute Herzdilatation bei acuten Infectionen,"—*Krankheiten*, Jena, 1899) has, unfortunately, been inaccessible here, as indeed, literature in general.

Independent and intensive study here through the past winter has then resulted in the recent emphasis (Davis, E. L., "Roentgen Study of 1000 Chests," *Journ. A.M.A.*, May 25, 1918, 70, p. 1528) on the value not only of localized consolidation and high diaphragm but especially of cardiac enlargement in the diagnosis of pneumococcus infection. *Major Davis seems to have been the first to take more than passing notice of enlarged hearts in pneumonia, and to emphasize that this phenomenon is not simply a complication but is (at least in lobar pneumonia) a fairly constant sign, and further a sign of early diagnostic value.* That attention to it will, in a great majority of cases, with rapid respiration and cough, betray lobar pneumonia before there is any shadow, seems proved by his work. This is a real step in the progress of early diagnosis, over the study by von Jaksch. While both these students seem to have outstripped the bedside worker in early recognition of the presence of pneumonia, the recent demonstration of the value of "râles on cough" in tuberculosis encourages the belief that a *careful parallel study of pneumonia-suspects by x-ray and by the cough test may show after all that râles—provided this cough technic be insisted on—is the earlier sign.* In the absence of literature it is not now practicable to determine whether this was in mind when Professor De la Camp (*Fortschritte auf dem Gebiete der Röntgenstrahlen*, 1905, 8, 323) wrote: "Lepine has asserted on the basis of his observations that under certain conditions an existent pneumonia need give neither percussory nor radiologic findings."

The diagnosis of fluid similarly was made sometimes by the medical man's needle, when the x-ray was *not* blotted out. This occurred only rarely after the beginning of the work, because one of Major Davis's laboratory assistants built for him a rough wooden frame to slip onto the truck under the pillow, thus holding the patient in a semi-recumbent position, and permitting plating of nearly every patient without any ill effects being noted after return to the ward. On the other hand several pneumonias persistently watched for fluid by both ward surgeon and assistant medical chief, and persistently revealing loud breath sounds, were first spotted by the radiologist as having fluid, which in turn, was proved with the needle.

The diagnosis of the organism is a matter of such vital importance to the patient that the physician needs to struggle against the fascinating simplicity of the skiagram and instead to become earlier suspicious of pneumonia and to secure earlier an early morning sputum after forced coughing.

19. Physical Signs.

a. While in many cases there was no single presenting sign but several were noted simultaneously, the frequency with which each individual sign was present at onset during the six months series analyzed, 241 cases, was as follows: Fever, 77% of cases; rapid respiration, 50%; pain on side of pneu. (none on opposite side), 36%; râles, 5%; rusty sputum, 4%; rigor, 4%; consolidation, 3%;

b. The regularity of association of the signs with pneumonia was: Fever in 99%; râles in 93%; rapid respiration, 90%; consolidation, 86%; pain in side, 56%; rusty sputum, 15%; rigor, 5%.

c. The temperature for the evening of the day of admission averaged 102.1, varying from normal to 105.8. If, however, one studied the highest value of the four temperatures taken during the first thirty-six hours in hospital (usually, but by no means always, the evening temperature of the second day), the average was 103.7.

d. The respiratory rate (1) On the evening of admission varied in 241 cases from 18 to 62, with an average of 25. (2) If, however, one studied the highest rate out of the four recorded during the first 36 hours in hospital, the extremes of variation were the same, 18 to 62, but the average was 28.

As a control on these two remarkable figures

in pneumonia, 200 consecutive completed cases of "Bronchitis acute" were reviewed. The respirations were found (1) to vary from 15 to 28, with an average of 20, and (2) to vary from 16 to 32, with an average of 21. As a second control 200 consecutive completed cases of "Tonsillitis acute" were reviewed. The respirations were found (1) to vary from 16 to 48, with an average of 22, and (2) to vary from 18 to 48, with an average of 23. It is surprising that tonsillitis should result in a higher respiratory rate than bronchitis, perhaps due to higher temperatures.

The conclusion seems justified that any respiratory rate of 24 or more is a danger signal. In all such cases one should make a daily hunt for râles by the cough test or (if bronchitis is present) for consolidation signs such as broncho-vesicular breathing or x-ray; and also make the patient cough daily at 6 A.M. for at least three minutes by the watch until sputum has been secured.

Pain in one chest was associated with 64% of the lobar pneumonias and with 40% of the broncho-pneumonias.

Râles were noted: Before consolidation, in 116 cases; with consolidation, in 55 cases; after consolidation, in 53 cases; at no time, in 17 cases. In other words, despite the teaching that crepitant râles are an early sign of pneumonia and even with the help of the bronchitis that was so often the admission diagnosis, we failed to find these early râles in 22% of the cases. Probably the tuberculosis trick, "breathe out and cough," would enable earlier diagnosis by this sign.

Consolidation was present in a lower lobe in 73% of the cases. A strikingly large proportion of these were diagnoses not by the ward surgeon but by one in particular of the assistant chiefs on the medical side. Repeatedly his note is found on the briefs: "Broncho-vesicular breathing after cough, inside angle of scapula." or "cough distinct at scapular angle," or "few crepitations on cough at angle of scapula." In suspected pneumonia more general concentration of attention on what might be called Terry's Point is suggested, analogous to the well-known concentration on the apices in suspected tuberculosis.

Whispered pectoriloquy is a sign ordinarily regarded as a refinement of physical diagnosis, interesting to students but of small practical value. In the early diagnosis of consolidation,

however, it is sometimes beautifully distinct though one fails to note the usual signs (slight dulness, broncho-vesicular breathing, localized weak breath sounds, râles on the "cough test"). It was especially valuable in two recent cases, with dulness and such dim breath sounds that no broncho-vesicular quality could be determined, yet W. P. was astoundingly clear and localized. In one of these cases the diagnosis was made of both fluid and solid, and an exploratory tap got 25 cc. fluid, culture of which revealed streptococcus hemolyticus.

The value of W. P. seems to be dependent on the following ideas: (1) The *Whispered* voice has the advantage over the . . . *spoken* voice that it does not set up sympathetic vibrations in the chest" (Norris, in Norris, G. W., and Landis, H. R. M., "Diseases of the Chest," Phila., 1917, p. 135), which blur the syllables used (such as 1-2-3 or ninety-nine). (2) The attention should, therefore, be focussed on the intensity or *clearness*, not on the loudness. (3) The *Whispered* voice is normally not transmitted clearly. (4) When the W. V. is transmitted clearly, it is called *Whispered bronchophony* or *increased transmission of the W.V.*, abbreviated W.V.

(5) When this sign is more marked, so that each syllable is startling clear cut, it is called *exaggerated bronchophony* or *transmission of syllabic speech* or *syllabification* or *whispered pectoriloquy* (commonly abbreviated W.P.).

(6) It is, in Cabot's opinion, a more delicate test for small areas of solidification than tubular breathing" (Cabot, R.C., "Physical Diagnosis," N.Y., Ed. 6, 1915, p. 163). In the wards here also it seemed more delicate, in some cases at least, and in those of great value.

(7) The rationale for this delicacy seems to be that the test has a sharp end-point like the more satisfactory chemical indicators (*e.g.* Phenolphthalein in gastric analysis) or like the "something or nothing" of that light percussion which is being increasingly advocated. In all three methods, W.P., titration, light percussion, the test for presence or absence is more fool proof than other tests dependent on partial changes in test of color or quality of sound (*e.g.* from compensatory to rude to broncho-vesicular breathing).

Other signs tabulated in the literature but not analyzed in this series were:

(1) *White blood counts*, because not found anything like so helpful as is often taught.

(2) *Blood pressure*, for the same reason.

(3) *Herpes*, because recorded so infrequently.

(4) *Character of respiration* (shallow grunting, labored, cyanotic), for the same reason.

(5) *Blood cultures*, because done in rare cases only.

TABLE XVI. PHYSICAL SIGNS.

ORDER OF APPEARANCE	FEVER	RÂLES	RAPID RESP.	CONG.	PAIN IN SIDE	RUSTY SPUTUM	RHOCH
1st	186	11	120	7	18	10	10
2nd	50	98	71	62	22	7	1
3rd	3	81	24	71	12	12	
4th		26	2	58	10	5	
5th		7	1	8	1	1	
6th		1	0	0	1	2	
Present in cases	239	224	218	206	134	37	11
Absent in cases	2	17	23	35	107	204	230

Present in per cent. of cases . 96% 93% 90% 84% 56% 15% 5%

(To be continued.)

Clinical Department.

REPORT OF A UNIQUE CASE OF FOREIGN BODIES IN THE STOMACH.

BY ALFRED C. CALLISTER, A.B., M.D., BOSTON,
Resident Surgeon, Boston City Hospital.

THE case reported here is of passing interest because of the large number, the large size, and the unusual type of foreign bodies, found in the patient's stomach.

The patient, J. R. S., aged 32, admitted to the Boston City Hospital from the Boston State Hospital was a dementia praecox paranoid, a type which is quite likely to swallow unusual objects. A brief transcript of the portion of the Boston State Hospital record which is pertinent to this paper is as follows:

"Patient has been losing weight recently. He had several times been prevented from swallowing pieces of metal. February 5th. It was reported that he had been swallowing sections of bed springs several weeks ago. For the past two weeks he has had some pain in his abdomen. He claimed to have passed a little blood in his feces, but this has not been observed. He also claims that he has vomited occasionally, but he has been kept under close observation and this has not proved to be true. He was given an enema on February 5th with good results,



FIG. 1.

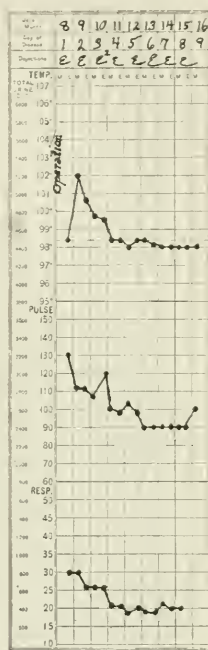


FIG. 3.

although he said that his bowels did not move for several days. February 6th and 7th he was

given milk and retained it. On February 5th, temperature was 101 degrees; pulse, 90; respirations, 24. February 6th, temperature, 100 degrees in A.M., 102 degrees in P.M. February 7th, temperature 100 degrees; pulse, 92; respiration, 26. There is a large mass in left upper abdomen which moves considerably with change of position on part of patient. Heart and lungs negative."

Admitted to Boston City Hospital on February 7 at 10 P.M. Temperature was 102.4 degrees; pulse, 100; respiration, 26. Patient somewhat emaciated. Physical examination essentially negative except for abdomen. Abdominal palpation revealed a large firm mass lying in the left upper quadrant which was hard and evidently contained numerous distinct hard objects which seemed to have sharp ends. On sitting the patient up the mass gravitated to the median line to the level of the umbilicus. There were general rigidity and tenderness over



FIG. 2.

the upper abdomen and the patient was in considerable pain. An emergency x-ray plate of abdomen was taken (see Fig. 1), which showed numerous metallic bodies all lying in the stomach and the ends of which resembled sections of bed springs. Patient stated that during the last three months he had swallowed "130 bed springs." A tentative diagnosis of perforating foreign bodies of the stomach was made and an immediate exploratory laparotomy done.

A rectus incision in the upper left quadrant was made. There was a small amount of slightly cloudy fluid in peritoneal cavity. The stomach was partially delivered and walled off by gauze packing. An incision two inches long was made on the anterior surface of the fundus in the vertical axis of the stomach just above the greater curvature. There was an escape of some bright blood and considerable dark fluid from the stomach. One hundred forty-one foreign bodies were "fished" out of the stomach (see Fig. 2), including 128 sections of bed spring, measuring 8 cm. in length and 1 cm. in diameter on either end, nine copper pennies, three peach pits, and a piece of tin foil, the total weighing two and one-half pounds. The gastric mucosa was considerably eroded and contained multiple small bleeding points. Incision in stomach closed and peritoneal cavity closed with drainage.

Accompanying chart (Fig. 3) shows condition of patient, and although he is very unruly and difficult to handle, he is running a normal convalescence.

Twenty or thirty years ago this case would have aroused unusual interest on the part of the profession, but today, with the marked advance of abdominal surgery, the case is only worthy of reporting because of the large number and unique type of the foreign bodies found.

Selected Papers.

INFANTILE SCURVY.*

BY JULES COMBY, M.D., PARIS, FRANCE.

Physician to the Paris Hospitals.

It is now upwards of twenty years since pediatric physicians in France began to publish typical cases of infantile scurvy, or Bar-

low's disease, and for my own part I have recorded no fewer than 42 cases of my own. Since the last of my communications on the subject, I have collected notes of 13 new ones showing the comparative frequency of this condition in Paris and the ignorance that still obtains in medical circles in respect thereof. It is for this reason that I think it well to return to the subject, even at the risk of trespassing on your patience.

The first case of infantile scurvy, or Barlow's disease, that was identified as such in France, was placed on record by Moizard, in December, 1897 (*Journal de Lucas Championnière*). I met with a second in May, 1898, and Dr. A. Netter saw a third in October, 1898, which he brought before the Hospitals' Medical Society on November 4, 1898. The first two were due to Gärtner's maternized milk, the third to milk sterilized by Soxhlet's method. Since that date numerous cases have been placed on record.

At first there was some hesitation as to the pathogeny and nosology of the affection, the majority supporting Barlow's view of its scorbutic nature, while a minority were inclined to regard it as acute rickets or even hemorrhagic rickets. Nowadays, however, we are virtually all in agreement, and I need only dwell upon the diagnosis and the treatment.

It was in 1883 that Sir Thomas Barlow published his magisterial essay on the disease that bears his name. In this remarkable work the author makes it perfectly clear that infantile scurvy is identical with scurvy occurring in the adult, from which it differs only in respect of its predilection for the bones (subperiosteal hematomas). After this epoch-making paper, no lingering doubt remained, and infantile scurvy was accorded the freedom of the clinical world. In 1889 sterilized milk was introduced into France on a commercial basis, and ere long its use began to spread. I prescribed it extensively in 1890 in the treatment of infantile diarrhea during the hot weather, as did also Dr. Variot. As the milk did not prove to be an unmixed blessing its place among well-to-do persons was soon after taken by Gärtner's humanized milk. It was at or about this time that one began to hear of infantile scurvy in Paris.

In his thesis, Dr. Paugam (Paris, May, 1901) mentioned eleven cases of Barlow's disease, seven of which were due to humanized milk. This, of course, soon caused Gärtner's human-

* From the *Medical Press*, January 29, 1919.

ized milk to disappear from the market, but Backhaus's remained, and is still employed in certain cases, though it is as productive of scurvy as any of the others. Then came the homogenized milk, which is still with us in two forms, *viz.*, the pure natural homogenized milk and the hypersugared milk.

It may be conceded that sterilization of milk constituted a great progress in puericulture, but every medal has its reverse, and in this case the reverse is the liability thereby created of inducing Barlow's disease. This fact requires to be constantly borne in mind in order that the risk, being foreseen, may be obviated. We may lay it down as an axiom that every child brought up on a sterilised food (milk or otherwise) for several months together, to the exclusion of any *living fresh articles*, is threatened with infantile scurvy. If we get that idea well into our heads we shall do like the Americans, we shall not wait for the supervention of the accidents which are so easily overlooked, but we shall avert them by giving every day a teaspoonful or a tablespoonful, according to the age of the child, of orange juice or the juice of some other fruit (grape juice, diluted lemon juice, etc.).

Before discussing the treatment of infantile scurvy I should like to say a few words about the diagnosis. Out of 55 cases of infantile scurvy that have come under my observation upwards of 45 had been the subject of mistaken diagnosis at the hands of practitioners. One infant was declared to be suffering from rheumatism, and was given salicylate of soda; another was thought to be developing acute ascending poliomyelitis, infantile paralysis, and was therefore electrified, massaged, and rubbed, causing the unfortunate infant much and unnecessary suffering. Another, suspected to be suffering from syphilis, was treated to mercurial inunctions, while such an one, diagnosed to be suffering from acute osteomyelitis, was slit open, the bone trepanned, etc. In other instances a diagnosis of coxalgia or Pott's disease led to the use of splints or plaster corsets. I stop here lest I should trespass on your patience, for the list is a long one.

Yet the characteristic symptoms of infantile scurvy are limited to a few striking manifestations that ought to attract the attention of every observant intelligent practitioner. They are easy to bear in mind, but should always be before us:

1. Remember that we are dealing with quite young children, babies between 6 and 18 months of age, brought up on artificial foods, mostly on fixed or homogenized milk, a few on sterilized milk, either at home or at the *crèche*.

2. All scurvy children present in a more or less marked degree painful pseudo-paralysis of the lower limbs, and movement of the leg elicits signs of distress.

3. Some of them display diaphyseal swelling affecting the tibia or femur (sub-periosteal hematoma).

4. Most of the little patients who have already cut their teeth are seen to have spongy, bleeding gums, and the child's mouth, when it cries, fills with blood.

Now this is quite enough to establish the diagnosis, but these four data must be borne in mind. This remark is the more necessary seeing that during the last few months I have met with some 13 additional cases which, in nine cases out of ten, had been overlooked by the practitioner. I need merely mention the last two, which will serve as types.

On August 22, 1918, I was called in great haste to a female infant 18 months of age living just outside Paris. She was a fine child, weighing upwards of 12 kilogrammes. She had cut 12 teeth. The medical man in charge of the case, in view of the pains in the legs from which the child had been suffering for six weeks, had prescribed salicylate of soda and massage. The symptoms got worse, and he suggested that it might be infantile paralysis, ignoring the ecchymoses and bleeding from the gums, and not taking into account the bringing up of the child on sterilized milk and malted milk. Naturally, things were going from bad to worse, but as soon as I had made the diagnosis—as any one of my colleagues would have done—a suitable treatment soon put matters right. The treatment was as follows:

1. The child to be left in its cradle, not to be moved, not to be rubbed, or bathed, or dressed—in fact, avoiding every kind of movement for the first few days.

2. Every sort of prepared milk to be discarded once and for all, plain cow's milk to take its place.

3. A teaspoonful of grape juice to be given twice a day. In winter I give orange juice, or failing that, a little diluted sweetened lemon juice.

4. In somewhat older children we may give a few spoonfuls of mashed potatoes.

Under this treatment the child that had been under observation for six weeks recovered in a week.

On August 27, 1918, I was called to see a child eight months old, brought up on the bottle and fed on sterilized milk distributed by the municipality. He cut his first tooth at six months of age, and now has four. Round the two upper incisors the gums are swollen and of a dark color, bleeding readily. A doctor was shown this but failed to diagnose the cause, merely ordering the gums to be dabbed with peroxide of hydrogen. But the infant was also suffering from pains in the legs, and the left leg was quite inert, causing much pain on the least movement. The second doctor diagnosed coxalgia. A third, more prudent, but apparently not more advanced, declined to express any opinion at all. Yet, as you see, the diagnosis was plain enough. A week of the above treatment, and health was restored. The rapidity with which these children recover, indeed, is one of the remarkable features of a remarkable disease.

Cases of the kind are now so commonly met with that it is rarely thought worth while to publish them, yet it is surprising how many practitioners fail to open their eyes to the significance of the symptoms. This is simply because they "do not think of it," it "does not occur to them." Well, one object of my paper is to make sure, as far as I can, that it shall occur to them, that the relationship of the bleeding gums and painful quasi-paralyzed limbs to a too restricted diet shall be engraved on their minds. It is humiliating for our profession that such mistakes should continue to be made, and it is to be hoped that our hospital physicians will do what lies with them to impress upon students the importance of bearing in mind the disastrous consequences of improper or inadequate feeding in early infancy.

ELECTION OF DR. FLEXNER.—At the annual meeting of the American Association for the Advancement of Science, recently held in Baltimore, Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, was elected president of the Association for the ensuing year.

Book Reviews.

Dispensaries—Their Management and Development. MICHAEL DAVIS, JR., Ph.D., Director of the Boston Dispensary, and ANDREW R. WARNER, M.D., Superintendent of Lakeside Hospital, Cleveland. New York: The Macmillan Company. 1918.

This is an interesting presentation of the history, management and development of dispensaries in the United States. Devoting a few pages to the story of the establishment of the first dispensaries of the English-speaking world in England, the book goes on to describe the splendid results which have been accomplished in this country through a form of organization which has for its first motive a direct endeavor to combat disease and promote the public health. It traces the scope and extent of the clinics, social service department and the follow-up work, and points out the relation between the hospital and the dispensary. The text of the law passed in March, 1918, requiring that all dispensaries shall be licensed by the State Department of Health, is reprinted in full. There are also helpful suggestions for by-laws and rules which may be applicable to the efficiency of dispensaries of the future, which must now be conducted under the unusual conditions created by the war. It goes into many of the practical details which people working in dispensaries particularly need. It is a valuable book for administrators, public health workers, and for all who are interested in better medical service for the people. At the same time, it sets forth to the general reader the importance of the fact that there is no greater economy to a state or nation than the health of the individual.

Tumors—Innocent and Malignant. By SIR JOHN BLAND-SUTTON, LL.D., F.R.C.S. New York: Paul B. Hoeber. Sixth Edition. 1918.

The author aims to give a complete description of the subject of cancer. The contents are divided into a preliminary chapter of a general discussion and into a specialized section. The preliminary chapter gives the liability of organs to disease, environment in relation to tumors, age distribution, natural history and malignant transformation. The remainder of the volume is divided into a tentative classification of the regions of the body with reference to tissue and the formation of cancer, explaining in detail the symptoms, diagnosis, treatment and prophylaxis of the disease. The theories of the cause of cancer and the use of the x-ray are discussed. The volume contains 740 pages and numerous illustrations.

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PHILIPPINE HEALTH SERVICE.

THE annual health report for the year 1917 of the Philippine Health Service gives a detailed survey of the work accomplished by the various divisions of the Service during the year. The work as a whole has progressed satisfactorily, with a splendid manifestation of enthusiasm and coöperation between the several departments. Perhaps the most notable results have been obtained in water supplies and sewage disposal, in the formation of women's clubs and societies for the protection of early infancy, and in the sanitary organization of the various provinces.

The epidemiological report shows that cholera has been kept under control, though sporadic outbreaks were prevalent and incessant watchfulness and prompt energetic work were constantly required. There has been a seasonal incidence of dysentery of progressively decreasing importance, due largely to improved water supply and sewage facilities. Plague has not

been present. That smallpox susceptibility has increased is shown by increasing varioloid, and it is probable that the immunity established by general vaccination in 1906 is wearing off. Malaria is still very prevalent in inaccessible remote districts, but is being eradicated in centers of population susceptible to mosquito extermination and free dispensing of quinine. Rabies has been controlled by distribution of antirabic treatment as well as by the destruction of over 22,000 stray dogs. Attention has been more particularly directed through two special commissions to the incidence and careful diagnosis of typhoid with a resulting increase in the number of cases reported, as compared with previous years. Diphtheria has been materially curtailed by the free distribution of anti-diphtheria serum. Preliminary surveys have been conducted as to the prevalence and local etiology of tuberculosis, and sufficient statistics have been compiled to warrant a definite and organized sanitary campaign against this disease for the next several years. As a result of the data obtained by the sanitary commissions and of the statistical study, it has been shown that the death rate from tuberculosis in the Philippine Islands is 2.64 per thousand of the population. This means, on an estimated population of 10,000,000, 26,400 deaths from tuberculosis per year. Routine fly, rat, and mosquito extermination work has been carried on in collaboration with epidemiological efforts.

The sanitary work in the provinces has been one of the most important branches of work for the year 1917. Perhaps the greatest results of the work of the sanitary commissions is shown in the reduction of the infant mortality. Six towns, upon survey, showed a decided reduction in the death rate of children under one year of age, two towns remained stationary, and one showed a slight increase. A particularly important branch of work of the sanitary commissions has been the development of the Antipolo sewage disposal system and the sanitary house. Another future benefit of far-reaching importance will be the installation of a system of health organization in sanitary divisions which, for want of a better name, has been tentatively designated "the automatic health organization." This system consists, briefly, of a series of maps, curves, and charts, card indexes and cross indexes, based upon the data which have been obtained through the work of the sanitary commissions, and which will be installed on the

ground in each sanitary division of the Philippine Islands as rapidly as may be possible. When this type of health organization has once been established, it will be possible for the health officer to know at once what particular factor is bringing about an increase in morbidity or mortality and it will indicate with a reasonable degree of exactness the probable origin of the infection which is producing the morbidity or mortality.

Three additional provinces, making twenty-seven in all, have been organized into sanitary divisions. Fifty-six new dispensaries, serving 127,000 population, have been established, making a total of 442 dispensaries, serving over 500,000 people. Three new provincial hospitals have been opened or started, and four new provincial laboratories have been provided for, making twenty-two in all. Forty district nurses made over 18,000 visits to the homes of sick, and gave instruction in hygiene, nursing, and dietetics. The district nursing division has also assisted in the organization of women's clubs in provincial towns, has assisted in baby contests, has had charge of exhibits at various town fiestas, has distributed large numbers of circulars on health subjects, and has given a great many demonstrations in the preparation of balanced diets. Fifty-four clubs have been formed for women, making a total of 111 in all. This is, perhaps, the most effective single measure yet evolved in reducing infant mortality, correcting the very prevalent dietary errors, improving domestic hygiene, and improving the family, social, and economic standards.

The Hospital Division has awakened the interest and the enthusiasm of the authorities and inhabitants of each province. In spite of the high cost, both of building materials and of equipment and instruments, the provincial boards persevere in their endeavors to build a hospital in each province. Albay has commenced work on its hospital; Bohol, Pangasinana, and other provinces have hospital projects under consideration. The Southern Islands Hospital in Cebu was separated from the Philippine Health Service on January 1, 1918, and placed under the control of the General Hospital in Manila. There are now under the control of the Health Service and supported by Insular funds the hospitals of San Lazaro and Bilibid in Manila; Bontoc, Baguio, and Kiangnan hospitals in the Mountain Prov-

ince; Bayombong Hospital in Nueva Vizcaya; and the hospitals organized by the Health Service in the Department of Mindanao and Sulu. The hospitals supported by provincial funds and in regular operation at present are those at Naga, Ambos, Camarines, and Tacloban, Leyte.

Bilibid Prison is divided into two sections: one for prisoners with short sentences, the other for long-term men. The second section contains the industrial shops, including machine shop, carpenter shop, furniture making, bamboo manufacture, and the making of other useful articles. Lace, embroideries, and similar articles are made in the women's section. The admission to the hospital is very large. The hospital consists of four large wards, a woman's section, two large spaces on the roof, operating, sterilizing, and dressing rooms, laboratory and dispensary, a large space for contagious and isolation cases, an out clinic, and a quarantine for all prisoners. The laboratory has been in operation since 1909, the work being performed by competent prisoners, under the supervision of the chief and assistant chief of the hospital.

The Culion Leper Colony has done good work in spite of the serious handicap of lack of funds. The lepers themselves built a clubhouse, exclusively with leper money and workmen, and they have taken great interest in the planting of home vegetable gardens. During the greater part of the year nurses have visited the sick, bandaging the wounded and giving simple talks to the patients with the hope of improving the social conditions of the lepers. Comparatively little time has been available for research work among the lepers.

The medical inspection of schools presents another interesting phase of the Philippine Health Service, and it has been available for research work among the lepers. The medical inspection of schools presents another interesting phase of the Philippine Health Service, and it has been developed to the fullest extent possible with the present appropriations. A nurse has inspected every pupil and has sent all children with abnormalities or defects to clinics for treatment. So far as the limited personnel available permitted, the inspection work was extended to the homes of the pupils.

This report of the Philippine Health Service contains detailed and tabulated statistics relating to various hospitals and divisions which are under its control.

MEDICAL ASPECTS OF THE SELECTIVE SERVICE SYSTEM.

THE second report of the Provost Marshal General to the Secretary of War on the operations of the selective service system to December 20, 1918, covering the period from May 18, 1917, has lately been released for publication. Aside from its value as a military report, Provost Marshal Crowder's summary is one of especial historical interest to the whole American people. The raising of an army by selective draft was an event which made itself felt in every home, office, shop, factory and farm throughout the country. Never before in the life of our Nation have we been called upon so universally to serve, and the hearty coöperation of civic agencies with the governmental authorities has proven beyond a doubt that we were unreservedly devoted to the task of raising an army which would go "out to win." In such a report it is not possible to go into lengthy details of the manner of service rendered by each link in the chain, but such duties as were obviously the most important have been described here. A few words of introduction acquaint us more generally with the objects of the draft—"To enroll for service over 24,000,000 men; to mobilize a selected army of more than 2,800,000, a million of them within the space of 90 days; to have presently available for military duty 2,000,000 additional fighting men; to classify this vast group of manpower in the order of its military and industrial importance, to maintain them in a status of maximum efficient production and to pave the way to a speedy return to normal peacetime pursuits while recruiting the full fighting strength of the Nation—these are results which would be instantly rejected as impossible did not the actual facts stand as irrefutable testimonials of their accomplishment." The report has also shown us that we have profited by the experience of the draft called for the Civil War and in turn have also profited by the experiences of the first six months of 1917. As a Republic opposed by inheritance and tradition to military compulsion, the system of selective draft became popular as the people's task and its achievement as their own reward.

In consequence of the publicity brought about by the selective draft, many diseases heretofore hidden were uncovered and it is with the results of the efforts made in this direction that

the medical profession is particularly concerned, for after all it was from Class I that the army was raised (no other class having been drawn upon), that class of men who were physically, mentally, and morally fit to fight. In this connection it is interesting to know that when the selective service regulations were made up, provision was made for the organization of medical advisory boards consisting of three or more members whose duties were to examine physically those cases which had been appealed to them from local boards. The members of these boards were named by the governors of their respective states and appointed by the President. There were 1,319 boards distributed throughout the States with a total membership of 9,577. By means of these highly trained technical agencies, many obscure diseases were detected and thus the local boards were greatly assisted in their classification of men. To these men, and to all members of the medical profession, a debt of gratitude is forthcoming from the Nation. They gave of themselves and of their time unsparringly.

It was soon found that the standards of physical examination based on those of the Army under the volunteer system were too severe and a new set of standards was made in June, 1918. This, of course, resulted in some confusion, but it would seem, in no serious harm. By the original plan the registrant was either expelled or rejected for military service on the physical qualifications. By the new plan, four groups were provided—Group A, those unconditionally accepted for general military service; Group B, those suffering from remediable defects; Group C, those accepted for limited service on account of defects which fall within the proper standards; and Group D, those who were unconditionally rejected for all military service. The disposition of the members of these several groups was carefully made under experienced medical direction. Arrangements were made by hospital authorities and medical men for having remediable defects corrected without expense to the registrant. Group B proved an important reservoir of man power. Group C men filled many responsible positions in the ranks of the Army, and Group D men were large in numbers. Among Group D it was necessary to detect malingers—those psychoneurotics, confirmed neurotics, etc., and it often became a knotty problem for the medical examiners to decide whether the defects complained

of were sufficient cause for rejection. Frequently, upon examination at mobilization points by Army doctors, there was further rejection, but this was due to one of three things—variances due to physical fitness of registrants in different localities; variances due to different action by different local boards, or variances due to different action by different camp surgeons.

Marshal Crowder's report is replete with tables of comparison which demonstrate in a concise manner the striking figures available in the department of physical examination of registrants under the selective service regulations. The successful work of the medical profession in meeting this national crisis is splendid demonstration of unflinching loyalty.

RETURN OF TWO BOSTON HOSPITAL UNITS.

THE Massachusetts General Hospital Unit, Base Hospital No. 6, has returned to the United States after twenty months of active service in France. There were 22,000 cases treated by the unit at its hospital, which had 1,000 beds originally, and later, 5,000. Of these cases, 17,466 were surgical ones. There were only 384 deaths, of which 70 were of a surgical nature. This record by no means covers the entire work of the members of the unit. Behind the front lines, some of the best work was done. Stationed at field hospitals they cared for the wounded under constant fire and performed by candle light successful operations which would have baffled expert physicians in the best equipped hospitals in the days before the war. During the period of the great German offensives, many members worked until, from sheer exhaustion, they fell beside the operating tables. They often remained at their posts for fifty to seventy hours.

Miss Sara E. Parsons, superintendent of nurses for many years at the Massachusetts General Hospital and chief nurse of the unit, is reported to have said, in commenting upon the brave and excellent services rendered by the nurses of the unit:

"Braver nurses than these nurses who served under me never lived. They were wonderful—sisters of mercy who knew no fear and whose one thought was of the boys they had gone to save. People in Boston, I am afraid, believe we

handled only cases that had come to us, step by step, from other hospitals nearer the front. That is not so. Often, especially during the great drives just before the armistice, cases came to us directly from the front. In July, at one time we had 4,319 cases in the hospital. Each day saw the number increase until every bed was taken.

"Many of our doctors and nurses were detailed at the front. Many of them were at the front for weeks and months at a time with mobile hospital units. There were also nurses of our base hospital detailed to train duty—bringing back wounded from the front. Many of these women were cited by the French and will soon, I understand, be decorated with the Croix de Guerre."

Dr. Frederick R. Washburn, general superintendent of the Massachusetts General Hospital, who sailed as colonel in command of the unit when it left for France in July, 1917, is now in London, and Lieutenant-Colonel Addison G. Brenizer of Charlotte, N. C., who joined it soon after its arrival, was in command on its arrival in New York. The personnel of the Massachusetts Hospital unit which reached New York on the *Abengarez* is in part as follows:

Lieutenant-Colonel Addison G. Brenizer, Major Roger Kinnicutt, Major Robert F. Leinbaeh, Major James H. Means, Major Albert S. Merrill, Lieutenant-Colonel William L. Moss, Major Everard L. Oliver, Major Richard F. O'Neil, Captain Beth Vincent, Captain Ralph A. Hatch, Captain William M. Hunter, Captain Frederiek C. Irving, Captain Henry C. Mabie, Captain Raymond M. Spivy, and Captain Harold G. Tobey, and Sara E. Parsons, chief nurse.

The Boston City Hospital Unit, Base Hospital No. 7, is due to arrive at New York on the *Lorraine* on March 30. The unit was organized by Dr. J. J. Dowling, former superintendent of the City Hospital, and sailed for France in July. The hospital base was at Jon, on the outskirts of Tours, some distance back of the lines. It had 2,700 beds and handled about 8,000 cases. The original personnel included 35 officers, 100 nurses, and 200 men. About twenty of the nurses have volunteered for service with the Army of Occupation in Germany. Among the officers of the unit may be named: Colonel Allen M. Smith, Majors George H. Lathrope, Ellsworth Eliot, John T. Thomas, David D. Scannel, and Lieutenant-Colonel E.

H. Nichols, who was with the unit at the close of the war and recently returned to Boston. Captain R. J. Kiscock was the only officer to return with the unit.

MENTAL HYGIENE.

THE significance of mental disease as a health problem is becoming increasingly recognized by health authorities. In order to formulate a program of practicable control and preventive measures the United States Public Health Service needs the assistance of other Government agencies. A program has been outlined and will be carried out as rapidly as funds become available for such purpose. This program considers the most effective means by which the several Government agencies can co-operate in studies and investigations of mental hygiene, the problems of better care and treatment of the insane, mental defective, and epileptic, and measures for the prevention of mental disorders. In the Public Health Report for February 14, 1919, the suggested activities are outlined.

The Department of Labor could render valuable service in assisting in the establishment of a school for the training of medical officers as mental hygienists, in providing facilities for training nurses and assistants for duty in mental hygiene work, and in investigating the care and treatment of insane aliens confined under immigration laws in public and private institutions at Government expense. Government coöperation would assist in the mental examination of coastwise pilots, locomotive engineers, and train dispatchers as a safeguard to the traveling public, and of civil employees in order to determine their fitness for different occupations. The Department of the Interior could coöperate in the study and prevention of insanity and mental deficiency among Indians, Esquimaux, and other primitive races. In the revision of educational methods from the standpoint of mental hygiene and in devising practical plans for the establishment of special classes for the training of feeble-minded and delinquent children, the assistance of the Bureau of Education is needed. Federal and State departments of justice could secure the adoption of a model law providing for the early treatment of mental disorders, the enactment of a

model commitment law, and the establishment of psychiatric pavilions in general hospitals and in connection with the courts.

In matters of prevention, the Public Health Service considers it desirable and practicable that State and local agencies should coöperate in securing the adoption of a law making certain types of mental disorders reportable to the health authorities; in revising and publishing State laws of commitment of the insane and feeble-minded; in determining the prevalence of the insane, feeble-minded, alcoholics, and epileptics; in investigating the prevalence and the care and treatment of these classes of people in institutions in Alaska and in the insular possessions; in compiling a national reference index of the literature on mental hygiene; and in investigating mental status in relation to certain constitutional diseases and drug addiction. Coöperation with the industrial hygiene unit of the United States Public Health Service would make it possible to investigate the mental status of workmen as related to output, fitness, protection from health and injury hazards, and permanence of employment. In investigating the insanity of children and the personality of the potentially insane, the assistance of the child hygiene unit of the service is valuable. Of particular importance is the coöperation with the Division of Venereal Diseases in studies and investigations of the mental status of prostitutes and of the relation of venereal diseases to mental disorders.

This program of the United States Public Health Service should be of interest to the profession and should help in the solution of many problems connected with mental hygiene.

THE KALLIKAKS OF KANSAS.

In endeavoring to lower the infant mortality rate, the Division of Child Hygiene in Kansas was confronted with the large number of children born to feeble-minded, insane, and degenerate parents. Among this class of people, the birth and death rate of infants was found to be several times as high as among persons of normal development. The offspring of this group complicate the problems of the juvenile courts, child-placing agencies, and children's institutions, and later become inmates of almshouses, jails, reformatories, and prisons. The

cost to the State of caring for this class of people and protecting society from its delinquents is enormous. In order to investigate these conditions, a Commission on Provision for the Feeble-minded was appointed in 1918 by the Governor of Kansas. The work was carried on by volunteers for one year, and a report of their activities has been published in a pamphlet entitled, "The Kallikaks of Kansas." This name was chosen in recognition of the family history of Martin Kallikak, a soldier of the American Revolution, who was father to an illegitimate child born to a feeble-minded girl. The descendants of this feeble-minded girl, traced to the sixth generation, number nearly five hundred paupers, prostitutes, criminals, and degenerates, who have cost their State one and one-half million dollars—and the end is not yet.

This report defines feeble-minded persons, idiots, imbeciles, morons, and the border-line feeble-minded and describes their relative characteristics. Statistics show that at least three in every thousand in the population of the United States are feeble-minded, giving a conservative estimate of 280,000, 70,000 of whom are women of child-bearing age. It is probable that less than 30,000 can be cared for in our institutions. In Kansas it was discovered that there are 7,500 feeble-minded in that State, and less than one in ten is cared for at Winfield. Based on the lowest possible figures, there are 1,500 feeble-minded children in the public schools of Kansas, where they are not receiving the training which will enable them to become self-supporting. The Commission is convinced that the only way permanently to stop the increase of the feeble-minded is to transfer the children into the custodial care of the State before they reach the age of adolescence, and that the only way immediately to stop the abnormally high birth rate among the feeble-minded is to transfer feeble-minded men and women into colonies especially provided for their care. This pamphlet contains an article dealing with the feeble-minded as a menace, and presents methods of making intelligence tests and of diagnosing higher grades of feeble-mindedness and border-line defectives. The mental defectives in Kansas almshouses are described, and their position in court is discussed. The benefits which may be derived from special classes for backward, intractible, and defective children in public schools are enumerated. Colony

care for the feeble-minded has many advantages, and the essential requirements for such colonies are here outlined. The Menantico Colony of New Jersey is an example of the results which may be obtained by this treatment. This report includes the life histories of several typical feeble-minded persons and publishes, also, the Kansas legislation for the feeble-minded.

MEDICAL NOTES.

GIFT TO JOHNS HOPKINS HOSPITAL.—A gift of approximately \$400,000 has been given anonymously for the erection of a building at the Johns Hopkins Hospital to serve as a woman's clinic.

APPOINTMENT OF DR. WITHROW MORSE.—Dr. Withrow Morse has received an appointment as professor of physiological chemistry in the medical school of the University of West Virginia, Morgantown.

APPOINTMENT OF DR. EUGENE PORTER.—Dr. Eugene L. Porter has been appointed assistant professor of physiology at the Western Reserve University Medical School. He has been instructor in physiology at the Medical School of the University of Pennsylvania.

ANATOMY DEPARTMENT OF THE UNIVERSITY OF PITTSBURGH.—The Department of Anatomy at the University of Pittsburgh has been reorganized, because of the death of Professor R. E. Sheldon and the resignation of several members of the staff. The present members of the instructing staff are Professor Robert Retzer, Associate Professor C. C. Macklin, and Assistant Professor Harley N. Gould.

GERMAN CASUALTY LISTS.—In the 1,200 casualty lists published by the German army and navy are included the names of 1,158 physicians reported slightly wounded, 332 severely wounded, 663 killed, 422 dead from disease, 212 taken prisoner, 72 missing, and 1 killed by gas.

REDUCTION IN DRUG PRICES.—It has been reported from New York that drug prices, which have been elevated during the war, have been reduced. Within the last few days, it has been

announced by manufacturers of salicylates that a reduction of ten cents a pound has been made by the leading makers in order to stimulate buying.

The demand for acetphenetidin is apparently unsatisfied and today prices are merely nominal on the basis of \$2.40 a pound. Olive oil is available at \$4.00@5.00 a gallon for the yellow and green Malaga, with denatured quoted at \$3.25.

In regard to menthol, cablegrams from London quoted from 21s. 3d. to 21s. 9d., which is equal to \$5.50@5.70 a pound duty paid. The few holders of spot stocks here are firm in their views, quoting \$6 generally.

Reports were current in the drug market that Canada was beginning to place orders in this market for opiates, ipecac roots, and other drugs which now are urgently needed for combating the epidemic of influenza which has again broken out. This marks a new departure, since Canadian demands for opiates have hitherto been generally supplied by Great Britain.

DEATHS FROM INFLUENZA IN LONDON.—A report from London dated February 26 indicates that deaths from influenza are increasing. The total number of deaths from this cause in 96 large towns of England and Wales was 3046, as compared with 1363 in the previous week.

In Greater London the number of deaths was 974, as compared with 451 the previous week.

INFLUENZA IN BARCELONA, SPAIN.—A recent report from Barcelona, Spain, states that influenza is again occurring in epidemic form, although the present outbreak is not so virulent as the epidemic last fall.

CIRCUMSTANCES OF THE DEATH OF MAJOR HARRISON BRIGGS WEBSTER.—The circumstances of the death of Major Harrison Briggs Webster, whose obituary was published in a previous issue of the JOURNAL, have recently been made known. Major Webster, met his death at Bois de Sept Sarges, north of Verdun, while carrying a wounded doughboy away from the firing line. The story of the major's death has just been conveyed to his father by Lieutenant William M. Fay.

At the time of his death, the fighting was being carried on in the open, and the Forty-seventh Infantry was under a heavy bombardment. While assisting the wounded man from

the place where he had fallen, Major Webster was hit by a piece of a high-explosive shell and killed instantly.

APPOINTMENT OF DR. LIVINGSTON FARRAND.—Dr. Livingston Farrand has been appointed chairman of the Central Council of the American Red Cross and will direct and manage that organization. Dr. Farrand was the first executive secretary of the National Tuberculosis Association, an office which he held for ten years. For the past two years he has been directing the American Commission on the Prevention of Tuberculosis in France. After March first, when the War Council of the Red Cross goes out of existence, Dr. Farrand will be in supreme command.

RETIREMENT OF DR. SAMUEL W. LAMBERT.—Dr. Samuel W. Lambert, for fifteen years head of the medical faculty at Columbia University and dean of the College of Physicians and Surgeons, is to retire on June 30.

RETURN OF BELLEVUE UNIT.—The Bellevue Hospital unit, attached to Base Hospital No. 1, at Vichy, near Paris, has been relieved and taken over by an evacuation hospital personnel. The unit is composed of twenty-six physicians, sixty-five nurses, and two hundred enlisted men from New York. It sailed for France on February 18, 1918, and has since cared for a large number of the American wounded men. Base Hospital No. 1 was one of the largest near Paris. It was prepared for five hundred patients, but at one time cared for as many as 3,200 cases.

THE ROALDES PRIZE.—The Roaldes Prize of the American Laryngological Association, amounting to the sum of \$200, is offered this year in general competition for the best thesis upon some subject directly connected with laryngology or rhinology. Papers, typewritten, must be in the hands of the secretary of the Association prior to June first, 1919 addressed to D. Bryson Delavan, M.D., 40 East 41st street, New York, N. Y.

RESEARCH WORK ON INFLUENZA.—It has been recently reported that Rear Admiral W. C. Braisted, surgeon-general of the Navy, has predicted that there will be a recurrence of the influenza epidemic in 1920. In view of this

belief, he has urged that an appropriation be made by Congress for research work to determine the cause of the disease and its cure. An appropriation of \$300,000 for the study of the disease is carried in the sundry civil appropriation bill now before the House, but Admiral Braisted believes that this would not be sufficient to undertake the research work on the necessarily large scale. He has recommended a special appropriation, to be divided between the Public Health Service, the Surgeon-General of the Army, and the Surgeon-General of the Navy.

EDUCATION IN SOCIAL HYGIENE.—At a recent meeting of Senators and Representatives, members of the judiciary, and public officials from throughout the State, Health Commissioner Eugene R. Kelley described the activity of his department against social diseases. The war department film play, "Fit to Fight," was presented.

Major Wilbur A. Sawyer, acting director of the section of social hygiene of the Federal health service, who came from Washington to address the meeting, is reported to have said that he believed that the social diseases problem would be solved only by a concerted campaign of health education aimed equally at men and women and all classes of society.

Dr. G. M. Kline of the State Health Department reported that nine of every hundred patients cared for by public institutions suffer from mental diseases due to syphilis, and that 386 persons became state charges last year because of this disease.

LATENT SEPTICAEMIA.—The *British Medical Journal* has published recently the views of MM. de Gauléjac and Nathan on a form of septicaemia associated with injury of the cancellous bone. They presumably have in mind gunshot wounds, but they exclude cases in which the soft parts are involved, or at any rate so infected as to be the occasion for septicaemia of the usual type.

In the form under consideration there is but one symptom, a frequent pulse. The temperature is approximately normal and level: there is neither pain nor discomfort, nor loss of function until the lesion has been in existence for at least ten days, and until the pathological process approaches the compact tissue or the joint cavity. The authors hold that the bacteraemia they have found in almost all their cases is

definitely associated with the cancellous lesion because complete removal of all damaged tissue is the only sure and certain method of banishing the organisms (*Streptococcus intestinalis* or *pneumobacillus* of Friedländer) from the blood stream. If the bacteraemia be allowed to persist, progressive anaemia and emaciation appear in company with a chronic ankylosing type of osteo-arthritis. The authors also refer to an apyretic latent type in civil practice, often due, they say, to *Micrococcus tetragenus*, which results in a violent outburst akin to or identical with the ordinary acute osteomyelitis. At first sight it appears as if the authors were taking too narrow a view, from a particular aspect of well-known phenomena. Given a bacteraemia, and the frequency of transient invasion of the blood stream by small numbers of organisms can hardly be doubted, it is common knowledge that the cancellous tissue is a favorite settling ground for many organisms: that in this situation they may remain latent for long periods; and that the conditions favorable for their pullulation may be occasioned by slight local trauma. Even the symptomless period is not unfamiliar, but it is certainly worth noting that in this period blood cultures may be positive, and that a frequent pulse is alone enough to call for a bacteriological test. There is a considerable number of gunshot cases in which the amelioration of the patient's general condition lags decidedly behind the apparent satisfactory healing of the wounds. Often enough the bone marrow is the only tissue left to suspect; it may only need a positive blood culture to give the surgeon courage enough to explore the interior of a bone he would willingly leave alone, but may thereby abandon to chronic joint or other troubles that operation would prevent.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending March 1, 1919, the number of deaths reported was 279 against 345 last year, with a rate of 18.27, against 22.94 last year. There were 41 deaths under one year of age, against 58 last year.

The number of cases of principal reportable diseases were: diphtheria, 52; scarlet fever, 35; measles, 13; whooping cough, 8; typhoid fever, 3; tuberculosis, 48.

Included in the above were the following cases of non-residents: diphtheria, 3; scarlet fever, 6; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 2; tuberculosis, 19.

Included in the above were the following non-residents: Tuberculosis, 2.

Influenza cases, 195. Deaths, 33, of which 4 were non-residents.

PROPOSED LEGISLATION FOR EIGHT-HOUR DAY FOR NURSES.—An eight-hour day for all nurses and hospital attendants has been proposed to the Committee on Labor by John C. Gordon of Brookline. It is reported that prominent physicians and registered nurses of the State have opposed the bill. Mr. Gordon believes that both patients and hospital attendants would benefit by legislation that would restrict the number of working hours, for nurses often work sixteen or eighteen hours a day. Dr. Laura A. C. Hughes, Miss Helen Wood, Dr. James B. Howland, Dr. M. H. Bailey, Dr. Herbert B. Howard, and Miss Ester Dart were among those who opposed the bill.

COMMENDATION OF NAVAL VOLUNTEERS.—An order of commendation was issued by Secretary Daniels on March 4 for a group of fifty enlisted men of the Navy who, during the recent influenza epidemic, voluntarily submitted to experiments at the Naval Hospital at Chelsea, Massachusetts, to aid naval doctors in the attempt to determine the cause and method of transmission of the disease and methods of prevention.

BOSTON MEDICAL LIBRARY.—The recently issued Annual Report of the Boston Medical Library, the forty-third, states that on December 31, 1918, there were 98,097 volumes cataloged and on the shelves, with several thousand others on hand but not yet cataloged. A number of current German periodicals have arrived, after an interval of nearly three years. But few foreign books have been received. There were naturally fewer readers than usual on account of the absence of many members in camps and in France. Dr. George B. Shattnek, president since 1906, declined a reelection, and Dr. George H. Monks was chosen in his stead. Dr. R. G. Wadsworth was elected to fill the place of Dr. Elisha Flagg, resigned, treasurer since 1910.

NEW ENGLAND SANATORIUM.—A ten-day campaign has been started in New England to raise \$500,000 for the development and main-

tenance of a Central New England Sanatorium at Rutland for the accommodation of those patients who cannot afford other institutions. It has been announced that \$300,000 has been received in advance. Boston's quota is \$300,000, which will be raised by popular subscription. At a recent meeting in Boston, the need of such a sanatorium for people between the very rich and the very poor classes was emphasized. The fact that many discharged and disabled soldiers are tubercular was mentioned as one of the reasons for establishing this institution.

Among the speakers who explained the purpose and necessity of the proposed sanatorium were Dr. Charles W. Eliot, president emeritus of Harvard University; Dr. William T. Sedgwick of the Massachusetts Institute of Technology, Dr. Vincent Y. Bowditch, and Dr. Bayard T. Crane.

ADDRESS OF DR. DAVID L. EDSALL.—Dr. David L. Edsall, in a recent address for the benefit of the health campaign for raising \$270,000 for the Boston Dispensary, the Baby Hygiene Association, and the District Nursing Association, commented upon the illness and mortality among the poorer classes of people. He is reported to have stated that more than five-sixths of the mortality in the poor districts is entirely preventable and that it is through the work of these organizations that conditions among the poor may be ameliorated. In speaking of Germany, Dr. Edsall mentioned her debt to the world for the destruction of man power.

CARE OF FEEBLE-MINDED CRIMINALS.—The care of feeble-minded criminals is presenting a problem for consideration in Massachusetts. At a recent hearing before the Committee on Legal Affairs, it is reported that Dr. Lowell Wentworth, assistant director of the State Commission on Mental Diseases, and Dr. Walter E. Fernald, superintendent of the Massachusetts School for Feeble-Minded, recommended that one of the penal institutions of the State should be taken over for the housing of this class of criminal defectives. Both of these doctors appeared before the committee to oppose a bill which would give the Superior Criminal Court of the State power to commit men to institutions for feeble-minded. They consider that the schools for feeble-minded have not proper facilities for keeping criminals in custody and that this class of inmate sets an

extremely bad example for the feeble-minded boys of the institutions. A recent examination by Dr. Fernald has shown that one of every four inmates of Charlestown jail are feeble-minded, 60 per cent. of the women in Sherborn Reformatory are feeble-minded, and 22 per cent. of those in Concord Reformatory are in a similar condition.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—On February 25, 23 new cases of influenza, with 1 death, and 5 cases of pneumonia, with 3 deaths, were reported to the Boston Health Department. There were 39 cases of influenza, with 5 deaths, and 12 of pneumonia, with 8 deaths, on February 26. On February 27, 31 cases of influenza, and 6 of pneumonia, with 5 deaths from influenza and 3 from pneumonia were reported.

On February 28, 10 deaths from influenza and 8 from pneumonia, and 32 cases of influenza and 10 of pneumonia were reported to the City Health Department. The figures reported on March 1 showed a decrease, with 25 cases of influenza, with 2 deaths, and 8 cases of pneumonia with 3 deaths.

On March 2, 21 new cases of influenza, with 5 deaths and 3 cases of pneumonia, with 5 deaths, were reported. On March 3, there were only 16 influenza cases and 3 lobar pneumonia, with 6 deaths from each cause. Forty new influenza cases and four of lobar pneumonia were reported to the Health Department on March 4. Department officials attribute the increase to dilatory reporting of cases by physicians. The mortality rate due to both diseases still remains low, with 5 deaths from influenza and 4 of pneumonia.

The Massachusetts Medical Society.

THE next annual meeting of the Massachusetts Medical Society will be held at the Copley Plaza Hotel, Boston, June 3 and 4, 1919.

The following officers of the sections were elected by the sections for the year 1919:

Section of Medicine: *Chairman*, George A. Bancroft, Natick; *Secretary*, William David Smith, Boston.

Section of Surgery: *Chairman*, Howard A. Lothrop, Boston; *Secretary*, Hilbert F. Day, Boston.

Section of Tuberculosis: *Chairman*, Henry D. Chadwick, Westfield; *Secretary*, E. O. Otis, Boston.

Section of Hospital Administration: *Chairman*, George G. Sears, Boston; *Secretary*, Channing C. Simmons, Boston.

Chairman of Committee of Arrangements, J. L. Huntington, 311 Marlborough street, Boston.

Chairman of Committee on Scientific Papers for Meeting of Society June 4, F. T. Lord, 305 Beacon street, Boston.

LETTER OF RESIGNATION.

Treasury Department,
Bureau of The Public Health Service,
Washington, Feb. 21, 1919.

Massachusetts Medical Society,
Gentlemen:—

I have the honor to submit herewith my resignation in the Massachusetts Medical Society, to take effect December 31, 1919, and take this opportunity to express my deep appreciation of the cordial support and great assistance rendered by The Massachusetts Medical Society to me as Commissioner of Health of Massachusetts. I believe that the attitude of the Society toward the State Department of Health should be a model for other State medical societies. I hold that the members of The Massachusetts Medical Society, under the splendid leadership which they always have, adopted the policy that they were all health officers, without pay, and as such it was their duty to support loyally the properly constituted health authorities. To this attitude was due in large part such success as I had in Massachusetts, and it is a matter of regret that this broad policy in regard to preventive medicine does not exist in other State medical societies.

Very sincerely yours,
A. J. McLAUGHLIN,
Assistant Surgeon-General.

Formerly Commissioner of Health.
Commonwealth of Massachusetts.

Miscellany.

SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at the Roxbury Masonic Temple, 171 Warren Street, March 25, at 8.15 P.M.

Communication: City's Defences against Communicable Diseases

William C. Woodward, Health Commissioner of Boston.

The Censors meet for the examination of candidates, 4 P.M., Thursday, May 1, 1919.

Annual meeting, May 13, 1919.

BRADFORD KENT, M.D., *Secretary*.

NEW ENGLAND PEDIATRIC SOCIETY.—The fifty-eighth meeting of the New England Pediatric Society will be held at the Boston Dispensary, on Monday, March 31, 1919, at 8.15 P.M.

Clinical cases will be presented by members of the staff.

Dr. Maynard Ladd will speak briefly of his experiences in France.

WILLIAM E. LADD, M.D., *President*.
RICHARD H. SMITH, M.D., *Secretary*.

The Boston Medical and Surgical Journal

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Original Articles.

INSUFFLATION OF OXYGEN IN PNEUMONIA.

By S. J. MELTZER, M.D., NEW YORK.

IN the issue of the BOSTON MEDICAL AND SURGICAL JOURNAL for December 28, 1918, an article by Dr. Blodgett appeared, entitled, "The Continuous Inhalation of Oxygen Gas in Pneumonia and Other Diseases," which deals with "a paper by S. J. Meltzer, M.D., LL.D., published in the *New York Medical Record*, October 19, 1918." The article is written in a somewhat sarcastic vein; it contains two criticisms of Dr. Meltzer's paper on the use of oxygen in pneumonia: it does not mention an article by Dr. Blodgett, published nearly three decades ago on "The Continuous Inhalation of Oxygen Gas in Pneumonia and Other Diseases," and that the method used by Dr. Blodgett is much simpler than that "of a battery of ten pieces of apparatus such as no person less skillful than Professor Meltzer could possibly adjust (which must be obtained under his name from . . . New York)". The present writer acknowledges that he is indeed guilty of having written several papers on *insufflation* which, possibly, Dr. Blodgett did not read in original and certainly does confuse various subjects dealt with in these

papers. The "paper" which serves as the starting point for Dr. Blodgett's article was not a paper at all but a letter published by me in the *New York Medical Record*, October 19, 1918, and, judging by the quotations in Dr. Blodgett's article, I cannot help suspecting that Dr. Blodgett's information was derived from sources other than the mentioned letter. I may be mistaken on that point. At any rate, permit me to make the following statement which may throw light upon the points at issue:

In the course of the last nine years I published various articles on insufflation which dealt with three definitely distinct subjects:

1. One series of articles dealt with *intratracheal* insufflation as a method of anesthesia. It has been used on thousands of human beings and has no bearing upon the question of the use of oxygen in pneumonia and other diseases. Dr. Blodgett's reference in his article to this method is unintelligible to me.

2. In a series of articles I dealt with the method of *pharyngeal* insufflation as an emergency method for artificial respiration in man. It is true that the last article on the subject (*Medical Record*, July 7, 1917) is quite a long one, and it is also true that in the course of the last fifteen months I have demonstrated the efficiency of this method to military officers on animals in my laboratory. Whether this method

consists "of a battery of ten pieces of apparatus, such as no person less skillful than Professor Meltzer could possibly adjust" (as Dr. Blodgett chooses to express himself), this can be judged only by men who have seen the apparatus in action or at least have read my article in an unbiased way. At any rate, that apparatus was not intended, and is not recommended, for the administration of oxygen in pneumonia.

3. Some sixteen months ago I published an article in the *Journal of the American Medical Association* (October 6, 1917) on "The Therapeutic Value of Oral Rhythmic Insufflation of Oxygen," with a description of a simple apparatus for its execution. In this article I have indeed recommended the use of the apparatus for the administration of oxygen in pulmonary and cardiac diseases. This apparatus is in no way to be confounded with the apparatus for *pharyngeal* insufflation. As the administration of oxygen by means of this apparatus never failed to remove even extreme cyanosis in cases of lobar pneumonia (tested only on human beings and not on "fatally mutilated animals," as stated in Dr. Blodgett's article) and, as in the present cases of pneumonia due to *streptococcus hemolyticus*, cyanosis is an early and predominant symptom, I published a letter in the *Medical Record* reminding of my recommendation of oral rhythmic insufflation of oxygen.

Any one who takes the trouble to look carefully into the various methods of insufflation which I have recommended for various purposes, ought to see clearly that Dr. Blodgett could deal only with my article on "The Therapeutic Value of Oral Rhythmic Insufflation of Oxygen." Now let us examine the grievances of Dr. Blodgett. 1. I am indeed guilty of not having referred to the doctor's article published in the *BOSTON MEDICAL AND SURGICAL JOURNAL* 29 years ago on "The Continuous Inhalation of Oxygen in Pneumonia and Other Diseases, with the record of a case, etc." But so I have not mentioned other clinical articles on the subject of which there were quite a large number in the literature published long before the appearance of Dr. Blodgett's article. The few literary references to be found in my article deal only with statements of physiologists, who for more than a century insisted that the administration of oxygen is of no value, because the hemoglobin could not take up any more of the O_2 even under pressure. 2. Dr. Blodgett

states that his method of administration of oxygen is preferable to mine on account of its greater simplicity. Dr. Blodgett chooses to contrast his method with mine which, according to him, consists "of a battery of ten pieces of apparatus, such as no person less skillful than Professor Meltzer could possibly adjust," and goes on to describe as my method, not the one recommended for the administration of oxygen by means of *oral rhythmic insufflation*, but the method of *pharyngeal* insufflation. From Dr. Blodgett's original article (*BOSTON MEDICAL AND SURGICAL JOURNAL*, November 20, 1890) one learns only that the gas was conveyed from the tank . . . directly to the mouth of the patient. He does not say whether it was administered through a funnel, kept near the mouth of the patient, or through a tube kept in front of the mouth, or introduced into the mouth, and how far.

My method contains two additions to the method of Dr. Blodgett, or, if you choose, two complexities: 1. Oxygen is introduced through a flat metal tube, "hollow tongue depressor," which is "inserted into the mouth not farther than the middle of the tongue, so that, if the patient is conscious, the presence of the depressor may cause no gagging or other discomforts. The lips should be kept closed." The advantages of this factor are twofold. In the first place it was experimentally proved (on a human being) that by this method the air of the trachea consisted, after a few minutes, of pure oxygen, while in the administration of oxygen by other methods the air of the respiratory tract becomes enriched only by four or five per cent. of oxygen. In the second place the method has the advantage that immediately after the discontinuation of the insufflation, the hollow tongue depressor may be removed and disinfected. 2. A "respiratory valve" is interpolated in the tubing which permits the insufflation to be rhythmic; by turning the ring of the respiratory valve to the right, inspiration is produced, and by turning it to the left, expiration is permitted. As to the details of the respiratory valve, I have to refer the reader to my original articles.

A continuous insufflation of oxygen has the disadvantage that the inspiratory insufflation continues even during the period of expiration. This disadvantage is especially significant when the muscular power of the patient begins to be diminished and the aid of the expiration by the

accessory muscles becomes greatly impaired. The necessary removal of an injurious surplus of carbon dioxide is thus interfered with by continuous insufflation, and the development of asphyxia is hereby facilitated. Furthermore, the oxygen administered by continuous insufflation without the provision of controlling valves, becomes vitiated with carbon dioxide during expiration.

I consider the addition of the metal hollow tongue depressor and the insertion of the controlling respiratory valve as distinct improvements over the method of continuous insufflation through a rubber tube, a method so simple that I, of course, have tested it at the very beginning of my work.

I consider the administration of oxygen in respiratory and cardiac diseases as a valuable therapeutic measure. The administration of that gas in hospitals as well as in private practice, is still very inefficient and neglected. I am rather grateful to Dr. Blodgett for opening up the discussion of the administration of oxygen by efficient methods; the discussion cannot fail to do some good.

TABLE XVII. LUNG.

	LUNG	No. CASES PNEUMONIA	No. CASES EMPYEMA	PER CENT. OF PNEU. TO GET EMPYEMA	No. DEATHS AMONG EMP.	CASE MORTALITY OF EMPYEMA, PER CENT.
1st 100	Right	44	11		4	
	Left	27	6		0	
	R. & L.	28	5		7	
	No consol.	1	1		0	
		—100	—26	26%	—11	
2nd 100	Right	34	6		3	
	Left	30	3		4	
	R. & L.	35	2		12	
	No solid lung	1	1		0	
		—100	—17	17%	—9	
3rd 100	Right	32	8		12	
	Left	45	11		4	
	R. & L.	13	3		12	
	No consol.	—100	—22	22%	—5	
4th 100	Right	49	5		12	
	Left	36	1		0	
	R. & L.	15	4		0	
	No consol.	—100	—10	10%	—4	
401-485	Right	47	1		1	
	Left	27	0		0	
	R. & L.	11	1		1	
	No consol.	—85	—2	2%	—2	
Total	Right	216	31	14%	12	39%
	Left	165	26	16%	10	38%
	R. & L.	102	18	18%	12	67%
	Neither	2	2	100%	0	0%
		—485	—77	—16%	—34	—44%

TABLE XVIII.

PNEUMONIA AND EMPYEMA.

By FIRST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

(Continued from page 334.)

20. The relation of lung involvement to empyema incidence seems slight, since it followed right, left, and bilateral pneumonia with practically equal frequency: 14% of rights got empyema, 16% of lefts, 18% of bilateral pneumonias.

The case mortality rate was the same, 38% and 39% for right and for left empyemas, while for bilateral empyemas it was, as expected, much higher, 67%.

21. The lobe involved was the lower alone in 75% of the 485 cases. The next most frequent was the lower and upper 16%, then the upper alone 6%, and the middle alone 2%. When both lower and upper were involved, 22% of the cases got empyema; vs. 16% when only one lobe was consolidated.

22. Bacteriology showed that:

a. The organism in pneumonia was most

	LOBE	No. CASES PNEUMONIA	No. CASES EMPYEMA	PER CENT. OF PNEU. TO GET EMPYEMA	No. DEATHS AMONG EMP.	CASE MORTALITY OF EMPYEMA, PER CENT.
1st 100	Lower	68	16		6	
	Upper	3	1		0	
	Middle	2	0		0	
	L. & U.	26	5		5	
	None	1	1		0	
		—100	—26	26%	—11	
2nd 100	Lower	71	13		7	
	Upper	1	0		0	
	Middle	2	0		0	
	L. & U.	25	3		12	
	None	1	1		0	
		—100	—17	17%	—9	
3rd 100	Lower	91	18		6	
	Upper	4	12		1	
	Middle	0	0		0	
	L. & U.	5	12		1	
		—100	—22	22%	—8	
4th 100	Lower	74	6		3	
	Upper	9	1		0	
	Middle	5	0		0	
	L. & U.	12	3		1	
		—100	—10	10%	—4	
401-485	Lower	61	0		0	
	Upper	12	1		1	
	Middle	1	0		0	
	L. & U.	11	1		1	
		—85	—2	2%	—2	
Total	Lower	345	53	15%	12	41%
	Upper	29	5	17%	1	40%
	Middle	10	0	0%	0	0%
	L. & U.	79	17	22%	10	59%
	None	2	2	100%	0	0%
		—485	—77	—16%	—34	—44%

often unknown (in 44%), then pneumococcus alone, *i.e.*, without streptococcus (in 44%), then streptococcus alone (in 9%), lastly a mixture of streptococcus and pneumococcus (in 3%).

b. The mortality of pneumonia was greatest when the organism was streptococcus alone, 49%; then from mixed streptococcus and pneumococcus, 36%; then from pneumococcus alone, 12%; and least when the organism was unknown, only 6%.

c. The most frequent organism in empyema was streptococcus alone occurring in 53% of the 77 cases. Next came pneumococcus alone 27%; mixed streptococcus and pneumococcus in 17%, and finally unknown organisms in the remaining 3%.

d. The mortality of empyemas differed from the pneumonias in general by being highest from the pneumococcus alone: 52%. Next in fatality came streptococcus, 46%; and mixed, 31%. This is in striking contrast to the figures obtained by an earlier analysis of the empyemas during the first six months, 53 out of 241 pneumonias. Among these empyemas the mortality was exactly reversed, *i.e.*, highest with mixed pneumococci and streptococci, 66%; then with streptococci alone 49% died, while with pneumococci alone only 38%. This is a remarkable instance of the well known occasional turning of the tables by enlarging the number of cases analyzed. In this case, however, there seems to be an explanation: the first series, the white men, did not die so readily unless the streptococcus was superimposed upon the pneumococcus,

while the negroes later died with the pneumococcus alone.

e. The improvement in the number of cases typed is striking toward the latter part of the period reviewed. The percentage of cases whose bacteriology was "undetermined" in the first hundred pneumonias, 43% unknown; in the second hundred 56%; third 66%; in the fourth hundred 38%, and in the last eighty-five cases of the series only 14%. This satisfactory diminution in the number of untyped pneumonias was largely due to the growth of a general appreciation of: (1) The importance of coughed lung sputa, not hawked-up throat mucus; (2) the surprisingly large number of pneumonias from which such satisfactory specimens are obtainable only after insistence on an early morning coughing spell; (3) the kind of sputum likely to prove serviceable for typing, not easy to describe, but thin rather than thick.

The bacteriology of the 148 Negroes compared with that of the 337 white men showed that: The organism in pneumonia was:

1. Mixed streptococcus and pneumococcus in the following relative percentage of black and white cases respectively	1.4% B. vs. 3.6% W.
2. Streptococcus alone in	1.4% B. vs. 12.2% of W.
3. Pneumococcus alone in	66.1% B. vs. 34.1% of W.
4. Undetermined in	31.1% B. vs. 50.1% of W.
	100% 100%

In other words:

1. A mixed infection with strep. and pneum.

TABLE XIX. BACTERIOLOGY.

ORGANISM		PNEUMONIA			EMPYEMA		
		No. Cases	No. Dead	Mortality Per Cent.	No. Cases	No. Dead	Mortality Per Cent.
Mixed streptococcus and pneumococcus	Type I	4	0	0			
	Type II	3	2	66%			
	Type III	2	1	50%			
	Type IV	2	1	50%			
	Unk.	3	1	33%			
	Total	14	5	36%	13	4	31%
Streptococcus alone (<i>i. e.</i> without pneumococcus)		43	21	49%	41	19	46%
Pneumococcus alone (<i>i. e.</i> without streptococcus)	Type I	34	4	12%	12	1	50%
	Type II	54	7	13%	12	1	50%
	Type III	38	5	13%	2	1	50%
	Type IV	80	5	6%	5	2	40%
	Cult. but type unk.	7	5	56%	10	6	60%
	Total	213	26	12%	21	11	52%
Unknown		25	12	6%	2	0	0
Total		485	64	13%	77	34	44%

was about one-third as common in the B. as in the W.

2. The streptococcus was about one-ninth as common in the B. as in the W.

3. On the other hand the pneumococcus alone was about twice as common in the B. as in the W.

4. Fewer defective specimens of sputum were obtained from the negroes.

If we compare the 148 negroes not with the total 337 whites but with the *contemporary* 97 whites, we find much the same results.

1. Mixed in 1.4% of B. vs. 8.2% of 97 W.

2. Streptococcus in 1.4% of B. vs. 4.1% of 97 W.

3. Pneumococcus in 66.1% of B. vs. 43.3% of 97 W.

4. Undetermined in 31.1% of B. vs. 44.4% of 97 W.

Or in other words:

1. Mixed infection was about one-sixth as common in the B. as the W.

2. The streptococcus was about one-third as common in the B.

3. The pneumococcus was much commoner among the B.

4. And this is the most important feature of the comparison of the black cases with the whites: the former were not only easier to group than the whites in the whole series, but were also easier to get typings on in this *contemporary* series, i.e., during the same period, with the same ward and laboratory methods. In other words, the smaller number of undetermined typings was not due to the fact that the negroes came at the latter part of the series, but apparently to their yielding more satisfactory specimens of sputum.

TABLE XX. BACTERIOLOGY OF 148 NEGROES.

ORGANISM		PNEUMONIA			EMPHYEMA		
		No. Cases	No. Dead	Mortality Per Cent.	No. Cases	No. Dead	Mortality Per Cent.
Mixed streptococcus and pneumococcus	Type I	..	..	..	..	..	..
	Type II	1	1	100%	..	..	..
	Type III	..	..	..	..	..	..
	Type IV	..	..	..	..	..	..
	Unknown	1	1	100%	..	..	..
	Total ..	2	2	100%	2	2	100%
Streptococcus alone		2	1	50%	2	1	50%

Pneumococcus alone	Type I	16	3	19%	1	1	100%
	Type II	33	6	18%	1	1	100%
	Type III	20	2	10%			
	Type IV	26	1	4%			
	Cultures but type unknown	3	3	100%	3	3	100%
	Total ...	98	15	15%	5	5	100%
Unknown	46	5	11%	0	0	0	
Total	148	23	16%	9	8	89%	

TABLE XXI. BACTERIOLOGY OF 337 WHITE MEN.

ORGANISM		PNEUMONIA			EMPHYEMA		
		No. Cases	No. Dead	Mortality Per cent.	No. Cases	No. Dead	Mortality Per cent.
Mixed streptococcus and pneumococcus	Type I	4	0	0			
	Type II	2	1	50%			
	Type III	2	1	50%			
	Type IV	2	1	50%			
	Unknown	2	0	0			
	Total ..	12	3	25%	11	2	18%
Streptococcus alone		41	20	49%	39	18	46%
Pneumococcus alone	Type I	18	1	6%	1	0	0
	Type II	21	1	5%	1	0	0
	Type III	18	3	17%	12	1	50%
	Type IV	54	4	7%	5	2	40%
	Cultures, but type unknown	4	2	50%	7	3	43%
	Total ..	115	11	10%	16	6	37%
Unknown		169	7	4%	2	0	0
Total		337	41	12%	68	26	38%

TABLE XXII. BACTERIOLOGY OF 97 WHITE MEN.

ORGANISM		PNEUMONIA			EMPYEMA		
		No. Cases	No. Dead	Mortality Per Cent.	No. Cases	No. Dead	Mortality Per Cent.
Mixed streptococcus and pneumococcus	Type I	3	0	0			
	Type II	1	0	0			
	Type III	1	0	0			
	Type IV	1	0	0			
	Unknown	2	0	0			
	Total ...	8	0	0	8	0	0
	Streptococcus alone	4	1	25%	4	1	25%
Pneumococcus alone	Type I	9	1	11%	0	0	0
	Type II	10	0	0	0	0	0
	Type III	11	2	18%	0	0	0
	Type IV	11	2	18%	2	1	50%
	Undet. ..	1	0	0	1	0	0
	Total ...	42	5	12%	3	1	33%
Undetermined ...	43	0	0	0	0	0	
Total	97	6	6%	15	2	13%	

A similar bacteriological table seems obvious for the broncho-pneumonias separate from the lobar pneumonias. This is especially desired by anybody interested in the streptococcus, the importance of which has been increasingly realized with each succeeding month of the past winter and spring. It would bring out more clearly the true extent of the supposed relation between broncho-pneumonia and streptococci. This relation is of the greatest importance. It can be traced only by using thoroughly reliable data. The use of any other would yield results of apparent value but really only misleading. It is felt that our data, while serviceable for the purposes of the bacteriological tables presented, are not, however, sufficiently reliable for the determination of the relationship under discussion, because:

a. Too many patients showing diffuse râles followed later by clinical and x-ray signs of consolidation not definitely either lobar or lobular, were not followed up. Looking back we can only guess. We cannot justly say whether there was:

- i. Bronchitis developing broncho-pneumonic patches.
 - ii. Bronchitis developing confluent-lobular broncho-pneumonia.
 - iii. Bronchitis developing lobar pneumonia.
- b. Too many sputa were:
- i. Never sent to the laboratory.
 - ii. There considered "defective specimens."
 - iii. Not examined for any streptococci.
 - iv. Not classified as to whether the streptococci were hemolytic or innocent.
 - v. Reported under a different classification on two occasions without any evidence in the clinical record of co-operation between the ward and the laboratory in deciding whether this divergence was due to:
 - i. Faulty technic.
 - ii. Reinfection with a different organism.
 - iii. Super-infection with a different organism.

(To be continued.)

Clinical Department.

REPORT OF A CASE OF CONGENITAL ATRESIA OF THE OESOPHAGUS.*

BY JAMES LINCOLN HUNTINGTON, M.D., J. HERBERT YOUNG, M.D., AND N. CHANDLER FOOT, M.D.,
BOSTON.

THE obstetrical history in this case is as follows: The mother is 39 years old, with a negative family and past history; date of last catamenia was January 9, 1918. Previously had had two normal labors, the children are alive and well; one miscarriage, followed by uneventful convalescence. The history of this pregnancy is in no way remarkable, the patient started in labor with rupture of the membranes at 2.20 A.M., on November 8th; under gas and oxygen, followed by primary ether at 10.25 A.M. she was delivered of a female child, weighing eight pounds, eight ounces. The delivery was in every way normal. The child breathed at once, but seemed to be secreting a great deal of mucus, requiring constant attention for the first two hours, turning blue repeatedly and choking. Every time there was respiratory difficulty the evacuation of a drachm or two of thick, tenacious, slightly yellow mucus by the mouth would give temporary relief. Between these attacks the child seemed normal.

When first seen by the surgeon, the infant was six hours old. She was well developed and nourished, rather pale for a new-born baby and slightly cyanotic. Her breathing was noisy, but not labored. The head and fontanelles were normal. The mouth and throat were filled with thick, tenacious mucus. The heart was normal in size and position, heart-sounds of good quality, no murmurs. Although the child had not cried lustily since birth, air apparently entered all parts of both lungs; but auscultation was difficult because of the noise made by the mucus in the throat. The abdomen and extremities were normal. There was no paralysis and no evident malformation. At the first examination nothing unusual was suspected. The child appeared normal, except for the large amount of mucus in the throat.

When seen the next day the amount of mucus in the throat was still considerable. Attacks of choking and cyanosis were frequent, sometimes three or four within one hour, and even with oxygen it was difficult at times to get the child breathing again. She had had normal

* Read before the Boston Obstetrical Society, January 28, 1919.

meconium movements and had passed urine. When given water from a medicine dropper and when put to the breast, she would take a mouthful, choke and stop breathing. When the attempt was made to give a tube feeding, the tube met an obstruction five inches below the gums and no fluid would pass this obstruction. Although the tube caused no discomfort when the attempt was made to pour in fluid, respiration would cease. The diagnosis of complete obstruction of the oesophagus was evident. Surgical treatment was not justifiable because of the poor physical condition of the patient, who died on the fourth day, death being due to exhaustion and an inhalation pneumonia which was revealed only at autopsy.

At autopsy the following facts were noted, the protocol will be given in somewhat abbreviated form. The body is 53 cm. in length, well developed and nourished; rigor mortis present in lower jaw, absent in extremities. Post-mortem lividity marked in dependent portions. There are no external abnormalities, the pupils are equal, 2 m.m. in diameter. Upon making the primary incision from suprasternal notch to mons pubis the subcutaneous fat is found to be well developed, the diaphragm is in its proper relationship to the ribs. The umbilical vein is patent throughout, from the healing umbilicus to the liver, 2 m.m. in diameter. Upon opening the thorax the lungs do not collapse.

The heart shows no abnormalities, excepting that it contains a small amount of fluid blood, indicating asphyxia. The right lung lies free, its surface is everywhere smooth and shining and is mottled purplish red and bright salmon-pink. The upper, middle and lower lobes are, for a great part, consolidated, the consolidation being of a patchy nature. The lower anterior margins of the upper and lower lobes show normal aeration and are of a salmon-pink color. On cut section this organ is found to be filled with areas of consolidation averaging 3-5 m.m. in diameter. Throughout these areas there is very little air content, the fluid content is slightly increased, as is the blood content. The bronchi are everywhere markedly congested and contain a slight amount of mucus. The left lung is very similar, the upper lobe being almost normal in color and consistence, with the exception of a few areas of very dark red hemorrhage, averaging 1-2 m.m. in diameter. The lower lobe is markedly mottled and contains numerous patches of consolidation which are

sparsely scattered throughout its substance. On cut section it is for the greater part normal in the upper lobe, except for the hemorrhagic areas just described; cut section of the lower lobe shows similar changes to those seen in the right lung, but much less marked. Its bronchi are exactly like those of its fellow.

Microscopically, the lungs show edema and hemorrhage into the alveolar spaces, with very marked congestion of the capillaries in the alveolar walls, areas of true broncho-pneumonia in which the exudate is composed chiefly of polymorphonuclear leucocytes and red cells. Some alveoli contain a thick, pink-staining mass somewhat suggestive of milk. Fibrin is present in the exudate in small amounts. Compensatory emphysema is noted in the least affected parts of the lungs. The bronchi are filled with pus and there is considerable sub-pleural hemorrhage.

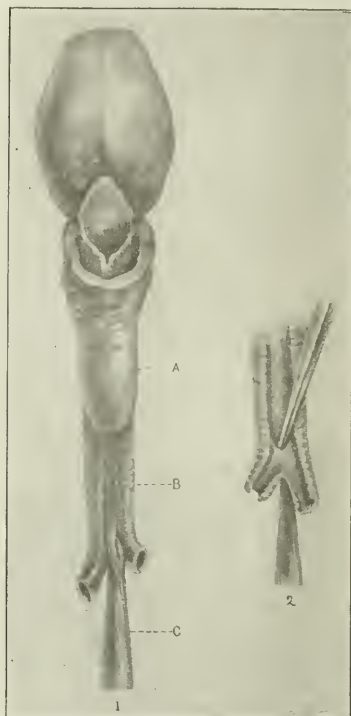
The spleen, liver, pancreas, adrenals, kidneys and internal genitalia are in no way remarkable.

Alimentary Tract. The oesophagus, beginning at the pharynx, extends downward to a point 3.5 cm. below the glottis, where it terminates abruptly in a rounded, slightly tapering, blind extremity not unlike the thumb of a glove. It is 1.5 cm. in diameter, has thickened walls, 2 m.m. diameter, and contains a good deal of thick, tenacious mucus. From its extremity a small musculo-fibrous cord continues to a lower oesophageal segment 2.5 cm. further down. This cord measures 1 m.m. in thickness. The lower segment of the oesophagus opens out of the trachea, just at its point of bifurcation. It appears to be similar to a normal oesophagus in its general structure and size, being one centimeter in diameter, with its walls of normal thickness and color. It terminates normally in the cardiac end of the stomach. The opening into the trachea is a small, transverse slit, about 5 m.m. in width, which communicates with the posterior surface of the trachea at a point directly behind the bifurcation. There is a suggestion of a funnel-shaped bulging of the posterior tracheal wall for 1.5 cm. above this communication.

Microscopic examination of cross sections of the connecting cord, taken at different levels, show no trace of epithelial tissue: it is made up of longitudinally arranged muscle fibres and intermuscular connective tissue. The muscle is striated.

In the accompanying illustration, Fig. 1 is

the posterior view of the specimen, *a*, the upper segment; *b*, the cord, and *c*, the lower segment. Fig. 2 gives the anterior view of the communication of the lower segment with the trachea.



The stomach and intestines present no abnormalities, the former contains a small amount of thick, bile-stained mucus; the latter are partly collapsed and contain a small amount of meconium and some gas. The cause of death was evidently respiratory embarrassment, due to the anomaly and to the inspiration pneumonia that resulted therefrom.

We come now to a consideration of the history of and the explanations for a condition which is common enough to warrant much more mention than has been accorded it in the average system of medicine or surgery; Albutt, Keene, Osler, Pfaundler, and Schlossmann (*La Fetra's* translation) all dismiss it with a paragraph or two and even special pathologies, like Kaufmann's, give but brief accounts of this anomaly. Lewis, in Keibel and Mall's *Embryology*¹, devotes much time to atresia of the

oesophagus at birth and puts special emphasis on the most common type, that represented by our case. He outlines the theory of its origin, without going into the subject at length, and gives a valuable bibliography.

A review of three of the authors named in this bibliography will give one a good idea of the work done on this subject and of the various theories to explain the different forms of the anomaly encountered. These three are Forssner², Kreuter³, and Giffhorn⁴. Giffhorn's article is of interest chiefly for its review of the literature in years past; he describes two cases and advances a theory as to the reasons for their existence. Forssner's article takes up the subject of atresiae of the gastro-intestinal tract as a whole, including those of the oesophagus and gives so excellent a summary of Kreuter's paper, that it is unnecessary to refer to it any further.

Summing up the material of these three articles we find that the condition has been known since 1838, when Schoeller described a number of cases of congenital atresiae of the oesophagus, stating that the type represented by our case is the most common. In 1884 MacKenzie described forty-five cases. Kreuter collected no less than one hundred and eleven. In discussing this last series, Forssner ruled out eighteen for various reasons; total absence of oesophagus, double oesophagus, other gross abnormalities present, insufficient data, etc. Of the remaining ninety-three he notes the following facts:

Sixty-four are connected with respiratory tract, sixty-one of them with the trachea, three with the bronchi. Four of those connected with the trachea opened into it in its upper portion, forty-one at the bifurcation. In sixty-one the upper segment ended blindly with a cord connecting it with the lower segment in thirty-three, no cord in five, and no data in twenty-six. There was complete interruption of the oesophagus, with two segments ending blindly, in eleven cases. Of these, six had a connecting cord, five had none. There was membranous closure of the oesophagus in three cases, and a stenosis in fifteen.

Thus we see that the most common type, comprising roughly two-thirds of all congenital atresiae, is one connected with the trachea at its bifurcation, where the lower segment takes its origin; the upper segment ending blindly and

being connected with the lower by a cord of muscular tissue.

There are several theories to explain the anomaly and we shall consider them chronologically. The oldest is that of Klebs and MacKenzie: that too much material was used up in forming the respiratory tract, the oesophagus being interrupted at a point where its substance was, so to speak, appropriated by the respiratory tract. Foerster and Giffhorn took the view that it was to be traced to the period when the oesophagus was still a solid cord and failed to vacuolate and open up properly; a theory based upon comparative embryology and, as has been subsequently shown, quite erroneous, as the human oesophagus is at all times patent, under conditions of normal development, unlike that of some of the lower animals. Kraus combines these ideas, advancing three hypotheses: *a.* That, in the type where the oesophagus is for the greater part obliterated, the respiratory tract has used up the material (Klebs' view). *b.* That those cases with membranous closure "entice one to think of epithelial occlusions." *c.* That the common type is due to pressure exerted by neighboring vessels, with resulting pressure-atrophy, an hypothesis also advanced by Keith, who found anomalies in the branching of the left subelavian artery ("low origin") in three cases where the oesophageal deformity was also present, but which he had to reject later, upon finding several cases where this did not hold true. Kreuter supported Foerster's view.

Forssner's explanation is more logical than any of these, but fails completely to explain the condition. He rejects the theories just cited, as they fail to explain the formation of the fistula which exists in most of the cases. He rejects the epithelial proliferation theory on the grounds that the separation of the respiratory from the alimentary tracts takes place at a period much in advance of that in which the oesophageal epithelium becomes actively proliferative; the two tracts separate before the four millimeter stage is reached, or shortly before, while the proliferative phenomena take place when the embryo is about 19 m.m. in length. That he is correct in this surmise is proved by the presence of a well-formed oesophageal atresia of the common type in an eighteen millimeter embryo in the Harvard collection, which corresponds perfectly with our case, excepting that there is a sacculated dilata-

tion of the middle third of the lower segment. Forssner's explanation is that the fusion of the outgrowing lips of the tracheal groove is incomplete at a point corresponding to the bifurcation of the future trachea and that this interruption persists as a fistula, which stimulates later proliferation of the epithelium above, or below it with resultant occlusion at the end of one or both segments; if either end be closed off, a fistula will persist. The characteristic dilatation of the upper segment, such as seen in our specimen, he thinks results from the swallowing of liquor amnii and that this brings about an axial shortening of the cul-de-sac which may cause the rupture and disappearance of the cord connecting the segments.

The best explanation of all is outlined by Lewis, in Keibel and Mall. When the trachea and oesophagus are becoming separated, at the 4 m.m. stage, two processes or wings of the body-cavity project up on either side of the latter, normally exerting enough pressure to groove its outer surface, these grooves running from below upward and from behind forward. These grooves are readily demonstrated in a reconstructed model of a 4 m.m. embryo. Now, supposing this pressure were increased by an increase in the size of these processes, due to an abnormal amount of fluid within them, or to cellular overgrowth, the grooves might become deep enough to mould the oesophagus into the trachea at that point, cutting off an upper and a lower segment, the former usually ending blindly, the latter being switched into the trachea and communicating with it. That portion of the oesophagus between the two wings of body-cavity would be pressed together and ultimately atrophy, giving rise to the cord. It would be well to bear this in mind in the future and investigate such cords microscopically to determine the presence or absence of epithelium.

To recapitulate: the best theory is that, at an early period, the walls of the foregut grow towards one another, forming two folds. Anterior to these folds is the future trachea, posteriorly the future oesophagus. If, while this is taking place, pressure is exerted at a point near the bifurcation of the respiratory tract by the impinging processes of body-cavity already described, the fusion will take place along new lines at this point, resulting in a shutting-out of the lower two-thirds of the oesophagus from the foregut into the respiratory tract and an obliteration of the lower extremity of the upper

third of the oesophagus, with the formation of an upper blind segment, or cul-de-sac communication with the mouth. It is easy to see how such an anomaly, with numerous mucous glands in the pharynx and upper cul-de-sac actively secreting (and possibly hypertrophied in the cul-de-sac) could cause much mucus to collect in the mouth and upper air passages. It could not be swallowed and if inhaled might excite further secretion in the trachea and bronchi from the resulting irritation, establishing a vicious circle.

In closing we wish to express our thanks to Professor Lewis for his kind assistance in the interpretation of this phenomenon.

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⁵ Keith: See Lewis.

Selected Papers.

CHOREA: ARSENIC AS A REMEDY.*

By GEORGE FOY, M.D., F.R.C.S.I.

"ROUGH NOTES ON REMEDIES," by Dr. William Murray, published in 1896, was one of the most successful books of its year. Its introduction at once produced a favorable impression, and the opening chapter "On arsenic in diabetes, chorea, and asthma," met and satisfied the wants of the great majority of his professional brethren. We have no intention of quoting theories on the etiology or pathology of chorea, either Sydenham's or the so-called *Chorea magna sive Germanorum*. The disease is described under the title Saint Vitus' dance by Sydenham; and we read that Saint Vitus was removed from Sicily when a boy, at the time of the Diocletian persecution of the Christians in the year 303, and suffered martyrdom in Florence. His mortal remains, after many removals, are said to have been interred in the cloister of Koovey in 836.

"At Strasburg many hundred began
 To dance and leap, both wife and man,
 In open market, lane and street,
 By day and night; many did not eat
 Until to an end their madness came;
 Saint Vitus' they did it name."

Gregory Horstius, the distinguished professor of medicine at Wittenberg, and afterwards a public physician and president of the University at Ulm, informs us that in the opening years of the seventeenth century some women, whom he described as being disordered in their minds and affected with a peculiar kind of restlessness in their bodies, repaired once a year to the Chapel of Saint Vitus, near Ulm, and continued there night and day, leaping and dancing, till they were so exhausted as to drop down almost dead. Thus, continues he, they were restored, and continued well till the following May, when the same propensity returned, and required a similar course of exercise to remove it. From this tradition the convulsive disease to which children are so liable derives its name. This condition of convulsive neurasthenia is, in some cases, difficult to differentiate from Sydenham's chorea. Hirsh reminds us that the dancing mania is still commemorated in the grotesque procession of the "jumping saints" which is held every Whitsuntide at Echternach. These manifestations are evidently symptoms of hysterical neurasthenia in weak-minded individuals, and, as we see from the older writers, were sometimes successfully treated by purgatives and bleeding. A different condition is found in Sydenham's type, even though only in degree. There are, however, some cases intermediate between these two in which the arsenic treatment is peculiarly successful. Of these Mr. Salter, of Poole, put some cases on record one hundred years ago, and successfully treated them in the manner Dr. Murrell so happily, and unconsciously, re-introduced. Eliza H., aged 17, has had chorea Sancti Viti for three months. "The muscles of the arms are most affected with the irregular and involuntary motions, but those of the trunk and lower extremities are considerably under the influence of the disease; indeed, the whole body is frequently thrown into the most grotesque attitudes." She was put on four-drop doses of liquor arsenicalis three times a day, with directions to add one drop to each dose every day. Ten days after she was taking fourteen drops in each dose, "and is apparently getting rapidly well." She is directed not to increase the dose any further. Three months later "there has not been any return of the chorea." Miss P., nine years of age, affected with chorea, September 6, 1817. Fear is supposed to be the exciting cause. On the 24th of the month the symptoms

* Reprinted from the *Medical Press* of January 22, 1919.

were greatly augmented in severity; her nights were greatly disturbed, and she was incessantly in motion during the day. The function of speech was nearly suspended. On this day she was put on the arsenic treatment, taking three drops daily. October 30: "There have been no symptoms of chorea for the last four or five days. Ten days later there was a slight relapse, sleep being interrupted by jactitations; the liquor arsenicalis was resumed and continued for five or six weeks, long after all the symptoms had disappeared, and at the time of reporting, April, 1819, Miss P. was in the enjoyment of good health." October 27, 1817: M. R., twelve years old, tall for her age, and of a delicate constitution. She has been affected with chorea for a long time, and for the last six weeks has had it in a very violent degree. "The whole system of voluntary muscles is subject to the jactitations, which during the day are interrupted, and at intervals are exceedingly violent; and notwithstanding, at night the convulsive motions are less frequent, yet they often then take place to such a degree as to deprive her of sleep for several nights together. To prevent her injuring herself in the exacerbations of the disease, persons were employed to hold her; and at all times when out of bed it has been found necessary to fasten her to her chair. Arsenic was given as in other cases in gradually increasing doses, until toxic symptoms were produced. November 20th: "The patient is able to dress and undress herself with ease. She walks well and articulates with tolerable fluency." November 27: "The patient is quite recovered; there does not appear to be the least symptom of her unpleasant complaint. She is at this time working with her needle, and has just read to me a short poem to show how perfectly she has recovered the power of articulation." June 2, 1818: John E., fourteen years of age, suffered from chorea three years ago, had a relapse six weeks prior to coming under treatment, suffered from the usual symptoms. August 1, returned to his work as a coachmaker's apprentice, free from all symptoms for four weeks past.

The first recommendation of arsenic in the therapeutics of chorea, or one of the first, is that of Mr. Thomas Martin of Reigate, who in February, 1813, placed the following case on record:—A girl, aged fourteen, subject to involuntary motions of the limbs, almost incessant, and so violent as to produce severe bruises

by blows inflicted on herself. She seized everything within her reach, dashing and throwing these about continually. During her short and disturbed sleep in the night she had very frequent agitations and convulsive movements, and was much harassed by nightmare. She suffered from severe headaches, and had difficulty in swallowing and masticating her food. Her articulation was broken and indistinct. A strong cathartic proved that her bowels were not loaded. Her head was shaved and bathed several times a day with cold water and vinegar; the shower bath used every morning, and her use of animal food was restricted. Infusion of digitalis was prescribed, and all without any beneficial effect. A compound gamboge pill was given every night, so as to act gently on the bowels, and the solution of arsenic three times a day, in doses beginning with five drops, and increasing one drop every day, until it might begin to disagree with the stomach and bowels, which it did when it was augmented to thirteen drops. The dose was then diminished, and continued at about ten drops, during six weeks. Soon after this plan was adopted the symptoms began to abate, and they gradually subsided, until the cure was completed. The use of digitalis and afterwards of arsenic by surgeons may with much probability be ascribed to the edition of Fowler's *Medical Reports of the Effects of Arsenic in the Cure of Agues, Remitting Fevers, and Periodic Headache*, published in 1786, to which Dr. Withering contributed a letter, as did Dr. Arnold. For neurotic convulsions the free purging recommended so strongly by Sydenham,—“bleeding and purging most alternate,”—held its ground. Such a case is that of Dr. T. Watt, Lecturer on the Practice of Medicine, Glasgow, which was published in February, 1814, under the title, “Jactitation, or Choreia.” The patient, Mary W., aged ten years, was on the first of January, 1813, seized with most excruciating headache, accompanied with almost incessant vomiting. She required her body to be kept always in a perfectly erect posture. If even the head was allowed in the slightest degree to incline backwards or forwards, or to either side, it increased the pain so remarkably as to render it intolerable. She never lay down until completely exhausted, and at the very point of falling asleep. These symptoms continued four weeks with little variation, but during that time she lost the power of speech and of walking.

In February she was seized with a propensity to turn round upon her feet like a top, which she did from morning to night. In March she lost her speech, and was seized with fits of rolling her body as a roller; two attendants, one at her head and another at her feet, as she lay across the bed, lifted her to the head of the bed, and she immediately rolled again to the foot. These fits lasted six or seven hours a day. To try to stop this a large bucketful of cold water was dashed over her body, with very good result. She continued this motion for six weeks. Hundreds came to see her.

In April she had convulsive spasms, "drawing her head and her heels nearly together, bent up like a bow, then allowing them to separate, her buttocks fell with considerable force on the bed." She repeated the same thing ten or twelve times a minute for fourteen hours a day. This continued for five weeks, when she was seized with a propensity to stand on her head. Resting on her knees and elbows, she placed the crown of her head a little farther down in the bed than her pillow; she then elevated the trunk and lower extremities directly to the roof of the bed; as soon as the body was elevated in this manner, all muscular exertion seemed to be withdrawn, and it fell down as if dead. She repeated this movement from twelve to fifteen times a minute for fifteen hours a day. These extraordinary performances took place in the presence of many physicians. She began at a particular hour every morning, and discontinued at a given hour at night. When micturition was seen to begin she had to be forcibly held down until the act was completed. Her bowels never acted except in consequence of an injection. She was brought into Glasgow during the night, in an open gig, and returned home in the same manner. The day following she was seized with a spontaneous purging, and soon after that she became more tractable. She took any purgative that was prescribed. In the course of a few weeks she recovered her speech completely, and also her former health, strength and spirits. Purgatives were diligently applied and operated powerfully. We can hardly fail to see that this cannot be considered as a case of Sydenham's chorea; the acts were purposive, and gratified the girl's vanity by attracting the attention of strangers.

A much more important case is that of a girl, eleven years of age, Christian Shaw, of Renfrewshire, to which reference has been made

in the article, "Robert Houstoun," as the notorious "Bargarran Case." This child is described as having had violent fits of leaping, dancing, running, crying, fainting, which first manifested themselves in August, 1696, and were ascribed to witchcraft. Not only Renfrewshire, but all Scotland became excited and concerned in the case. "A true narrative of the sufferings of a young girl, who was strangely molested by evil spirits, and their instruments, in the West, collected from authentic testimonies," is the title of one of the many pamphlets of the day. The clergy were most active on the occasion, and took full credit for the perfect restoration to health of the child in the March of the year following. They certainly were energetic in their contest with the Evil One. Besides days of humiliation, two solemn fasts were observed throughout the whole bounds of the presbytery, and a number of clergymen and elders were appointed in rotation to be constantly on the spot. December had come and gone, and as yet no sign of improvement, so the clergy decided to call in the assistance of the lay element, and a numerous signed memorial was presented to His Majesty's Privy Council to take steps to exorcise Christian Shaw. On the nineteenth of January, 1697, a warrant was issued setting forth "that there were pregnant grounds of suspicion of witchcraft in Renfrewshire, especially from the afflicted and extraordinary condition of Christian Shaw, daughter of John Shaw, of Bargarran.

"A commission was therefore granted to Alexander Lord Blantyre, Sir John Maxwell, Sir John Shaw, and five others, together with the sheriff of the county, to inquire into the matter and report. This commission is signed by eleven privy counsellors, consisting of some of the first noblemen and gentlemen in the kingdom.

"The report of the commissioners having fully confirmed the suspicions respecting the existence of witchcraft, another warrant was issued on the fifth of April, 1697, to Lord Hallerraig, Sir John Houstoun, and four others. "to try the persons accused of witchcraft, and to sentence the guilty to be burned or otherwise executed to death as the commission should incline."

The commissioners, thus empowered, were not remiss in the discharge of their duty. After twenty hours were spent in the examination of

witnesses, and counsel heard on both sides, the counsel for the prosecution "exhorted the jury to beware of condemning the innocent, but at the same time, should they acquit the prisoners in opposition to legal evidence, they would be accessory to all the blasphemies, apostacies, murders, tortures, and seductions whereof these enemies of heaven and earth should hereafter be guilty." After the jury had spent six hours in deliberation, seven of the miserable wretches, three men and four women, were condemned to the flames, and the sentence faithfully executed at Paisley on the tenth of June, 1697.

It is sad to think that Sir Gilbert Reane's address came too late to influence such a jury and such judges. Writing in July, 1813, he says: "Might not these strange delusions have been properly enough enumerated in the list of diseases which have disappeared? Some of those who have been accused of witchcraft believed themselves guilty, and might not they be stated as laboring under a species of epidemic insanity?"

Reprint from Journal.

RUPTURE OF THE AORTA WITHIN THE PERICARDIUM.*

By JOHN WARE, M.D.

CASE 1.—May 18, 1832. Mr. J. L., aged 30, an officer in one of the banks in this city, called on me for advice. He had been indisposed for some months. He more particularly ascribed the commencement of his indisposition to a severe cold with which he had been affected during the preceding winter. This, he said, had been accompanied by a peculiar feeling of obstruction at the bottom of the windpipe. Though never well since, his attention had not been called to his symptoms till within a few weeks. He now complained principally of pains and stiffness in the muscles and joints of all the limbs, more especially of the shoulders and arms. These were quite tender to touch. These pains, which he called rheumatic, and said he had suffered from before, were worse during the evening and in the night; so that his nights were restless and unrefreshing. He had lost flesh. His countenance, which in health was remarkably ruddy and healthy, was thin

and pale; the lips, especially, seemed quite destitute of blood. The unhealthiness of aspect was out of proportion to the actual emaciation. He had a great general feeling of weakness, but complained of hardly anything else. His appetite was indifferent, but he was still able to eat moderately and to digest pretty well. The tongue had a slight white fur. The pulse was 84. There was no disturbance in the respiration, and no cough. On examination of the heart there was no increased impulse; but a slight bellows or rasping sound was heard on the left side—as well as could be judged—occurring between the two sounds.

I continued to see Mr. L. occasionally for two months. The nature of the disease continued obscure—the unnatural sound in the pulsation of the heart was invariably found on examination, but no other symptom pointed particularly to this organ as the seat of disease. The only additional symptom which made its appearance during this period, was a considerable tenderness or soreness across the lower part of the chest; in consequence of which, a disagreeable sensation of jarring was occasioned by walking, or by any sudden motion. His system was slightly affected by mercurials—his diet was regulated—he took mild tonics, and the warm bath frequently—rode gently on horseback, and went a journey of some weeks. During this treatment, his general health and appearance improved, and he gained a little flesh. The pains and soreness of the muscles subsided under the use of guaiacum and the application of leeches, and the tenderness in the chest was relieved by a succession of small blisters. About the end of July he felt himself so far restored as to resume his duties at the bank, and continued there to his death. The amendment, however, was partial and temporary. I never saw him again, but was informed that he continued to grow more feeble—to complain especially of excessive weakness and faintness, and of great soreness across his chest, so that any jar in walking produced intense uneasiness. But he had no cough, no difficulty of breathing, and the appetite continued good.

November 1, he died instantaneously, while conversing with a person at the bank. His body was examined the same evening. The lungs were perfectly healthy. The pericardium was found distended with more than a quart of coagulated blood, from the rupture of an aneurism of the aorta, lying just without the

* Reported to the Boston Society for Medical Improvement, and published in the issue of the JOURNAL for March 27, 1833.

coronary artery, between the aorta and pulmonary artery. The opening through which the blood was effused was about one-third of an inch in diameter. The walls of the aneurism were very thin, but there was much thickening of the arterial coats in the neighborhood. Some of the bronchial glands were found ossified. The digestive organs, apparently, were in a perfectly healthy state. The small intestines were filled with chyme, and the lacteals distended with chyle.

Case 2.—January, 1833. I was called, about 10 in the evening, to see a gentleman who was supposed to be in a fit. I found him dead. On examination of his body the ensuing day, a ruptured aneurism was found, situated in the same part of the aorta as that described in the preceding case, and corresponding to it in appearance. The pericardium was distended with blood.

He had appeared on the day of his death to be in his usual health and spirits, had made no complaint, had attended public worship as usual, and ate a pretty hearty supper. His death took place immediately after getting into bed. Upon a more particular inquiry with regard to his previous state of health, I found, although he had not complained of indisposition, he had taken no medical advice, yet that he had not been well for some months. His countenance had been remarkably pale; his lips, especially, very pale for some time. During the last summer he had complained frequently of a troublesome pain in the left side; and during the autumn, of rheumatism of the shoulders. Probably many other symptoms might have been detected, had he been examined by a physician.

Upon comparing these cases together, we find a striking similarity in the appearances after death, and, so far as we have materials for judgment, in the symptoms during life. The symptoms common to both, were—a peculiar paleness and sickly appearance of the countenance generally, and especially of the lips—a pain and tenderness in some of the joints or muscles, mistaken for rheumatism—and some uneasiness, tenderness or pain about the chest. In each there was also absent, in a remarkable degree, almost every symptom which would direct attention to the heart or large vessels as the organ diseased; there was no cough, no dyspnoea in any position, no dropsical effusion. In the first case there was no affection of the

circulation, no irregularity of the pulse, no difficulty of breathing on exercise, and it is not improbable that this might be the case with the second also. The only circumstance in the person under my care, which excited a suspicion that the disease might be connected with the heart, was the absence of evidence of disease in any other part, and the anomalous affection of the limbs. The detection of the sound accompanying the heart's action contributed to strengthen this suspicion, but could hardly be said to confirm it.

American Medical Biographies.

WALTER JAMES DODD (1869-1916).*

Walter James Dodd, pioneer roentgenologist and a martyr to his specialty, was born in London, England, in the year 1869 and came to this country as an immigrant boy at the age of 15. He was early moved to follow the sea, but was induced by the college authorities, impressed by his ability, to continue life here as an assistant in the chemical laboratory of Harvard College in Cambridge, Massachusetts. He acquired a profound knowledge of chemistry, and in 1892 was appointed to the Massachusetts General Hospital as assistant apothecary, and four years later, as apothecary. It was in this capacity that he undertook experimentation with x-rays, under the usual unfortunate and restricted conditions which obtained in the early days. A severe dermatitis was therefore sustained in 1896, and he underwent his first operation for its results in 1898. Since that time he had been the subject of fifty operations for roentgen dermatitis and its sequelae.

Seeking to dignify further his work, which already, through his sacrifices, had attained high dignity, Dr. Dodd studied at the Harvard Medical School in 1900 and 1901, but completed his course and was graduated from the medical department, University of Vermont, in 1908. From that year until his death he held the position of roentgenologist to the Massachusetts General Hospital, an official recognition of what had been, in reality, his position for many years.

With the organization of a department of roentgenology in Harvard University, he was

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

appointed instructor, a position which he held at the time of his death. He was an honored member of the St. Botolph Club of Boston, as well as of many medical societies, in addition to his membership in the American Roentgen Ray Society.

He married Margaret Lea of Moncton, Nova Scotia.

Dr. Dodd died December 18, 1916, following still another operation for infected glands.

Such, briefly, were the events in a life of singular beauty—the life of a gentleman, loving and beloved; cheerful beyond conception in the face of physical anguish. Glorified by a martyr's soul, his face turned toward the horizon of high purpose, with an obliteration of self that cheapened and made tawdry the usual motives of ordinary men. He journeyed steadily on toward that horizon, turning into the gold of loyal friendship all those who came within the Midas-touch of his personality.

A life such as his gives charity a new meaning. As a crown to its later years, his ear was alert to hear from the far land of his adoption the call of the nation of his birth, in dire need of the peculiar service which he could give. Disdaining physical handicaps and added risks, he hastened forth to labor for England with a heroism that even she knew not of.

Thus again have fallen the burden and the staff, and again has another been received into the glorious band of those whom self-sacrifice, upon the altar of a noble cause, has immortalized.

PERCY BROWN, M.D.,

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Book Reviews.

The Surgical Clinics of Chicago, June, 1918.

Volume II. Number 3, with 63 Illustrations.
Published Bi-Monthly. Philadelphia and
London: W. B. Saunders Company.

The June number contains articles from 15 clinics. The contributors are: Drs. Albert J. Ochsner, Arthur Dean Bevan, Gustav Kolischer, Frank Smithies, Carl Beck, Frederic A. Besley, Frederick G. Dyas, Nelson M. Percy, Daniel N. Eisendrath, Edwin W. Ryerson, Edward H. Ochsner, Coleman G. Buford, Roger T.

Vaughan, Thomas J. Watkins, and George E. Shambaugh.

The subjects vary widely. Among the simpler ones are: "Umbilical Hernia in Infants and Children," by Dr. Coleman G. Buford; "Bunions," by Dr. Edwin W. Ryerson; "The Treatment of Potential and Acquired Static Flat-foot," by Dr. Edward H. Ochsner, with his personal method of strapping. Chest injuries are interestingly dealt with by Dr. Daniel N. Eisendrath. Dr. Frederick G. Dyas emphasizes the thing too often forgotten in some clinics, major surgery under local anesthesia. Dr. Frederic A. Besley discusses 11 cases of "Surgical Affections of Stomach and Duodenum"; Dr. Carl Beck, "A New Method of Gastrostomy"; and Dr. Frank Smithies reports a series of patients, and then discusses 1,000 cases of "Gall-bladder Disease"; this is an excellent piece of work condensed into 20 pages. Dr. Arthur Dean Bevan writes concerning "Kidney Stone; Ureteral Stone; Cholemia from Obstruction Due to Common Duct Stone; Large Ulcerating Sarcoma of the Neck; Huge Fibroma in the Mesentery at Ileocecal Junction and Jejunal Obstruction Due to Adhesions about Site of Gastro-enterostomy, and Two Large Tumors."

The June number seems to us to be exceptionally good.

Reclaiming the Maimed. R. TAIT MCKENZIE, M.D. New York: The Macmillan Company. 1918.

To physical therapy must be entrusted the restoration of many who have been injured in war service. This little volume, *Reclaiming the Maimed*, describes the unusual conditions brought about by the war and presents various curative devices. Treatment by physical therapeutic methods is particularly applicable to injuries to peripheral nerves, scar tissues, old septic wounds, to the final cure of post-operative conditions, to functional neuroses, to conditions commonly designated by the name of "shell shock," to sprains and fractures, rheumatism, flat foot, and other postural defects. In treating these conditions, galvanism and ionization, the faradic current, radiant heat and light, hydrotherapy, and massage have been found of practical value. The technique of these methods of treatment is explained in this book. In addition, twenty appliances designed for the re-education of weakened muscles and stiff joints are described. Two of the most interesting chapters deal with the importance of gymnastics and occupation in treatment. The value of physical therapy is being recognized: its purpose and achievement are clearly presented in this volume.

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THE TOXICOLOGY OF DIGITALIS.

DIGITALIS presents problems of a serious nature to both pharmacology and therapeutics, a truth which may be appreciated by reading the enormous bulk of experimental and clinical studies poured out upon the subject. There must be some serious reason why the inquiry into the constitution and effects of the drug, such as they are assumed by the practical physician as a basis for his deductions, should reach the gigantic proportions which we know today. The old doubt as to the possible dangers of large doses has recently come under discussion, but it would be too much to say that the exposition of the newest principles of investigation and development of the function of digitalis in disease had actually settled the question of its toxic properties. Some authorities, like Mackenzie, state that it would be a great advantage if writers would explain clearly what is the danger of which they are afraid. In thirty

years' familiar use of the drug he has never seen any evil result from its use "when given in the manner I have indicated" (*Diseases of the Heart*, 1918, p. 379). Other writers, while appreciating this and the great value of the "tonic" effects of digitalis, as well as the helpful assurance of Mackenzie that he "has never yet come across an ineffective preparation," yet maintain that the characteristic action on the heart may be harmful, either because the preparations of the drug are of varying strength or because they have been pushed too far.

As regards the first point, tests of the strength of different preparations have revealed great uncertainties. For example, Dr. J. H. Pratt observes (*Pharmaceutical Journal*, September 14th, 1918): "In a study of twenty-four specimens of American digitalis, both wild and cultivated, from different parts of the Union, six were found to be above the U.S.P. standard, three were exactly of standard strength, and fifteen were below it." He complained that large wholesale drug houses supply an inferior digitalis. The same thing is true of tinctures of strophanthus, and it is by no means improbable that this circumstance and the increase of the strength of the tincture to ten per cent. led to some untoward accidents in recent years. As regards the special application of digitalis and other remedies of the closely related group of poisons, there is an obvious danger in these variations of quality. That they have been the cause of fatal cases cannot be doubted by any one who has examined either the literature of this subject or the clinical records of practice.

The most explicit statements on this point, backed by practical and theoretical knowledge, are those of the French physicians, Huchard, Vaquez, and Bardet. Recently Fiessinger has sought to set forth the essential doctrine of the toxic nature and significance of digitalis: in which the drug is viewed no longer merely, as hitherto, from the standpoint of pharmacology and chemistry alone, but from that of dynamics, for which its "tonic" action is so essential a characteristic. In his latest article (*Rev. gen. de clin. et de ther.*, 1916, Vol. 30, p. 536) he develops his objections, briefly, as follows: "We should not return to the prescription of digitalis, if its use did not continue to cause errors in therapeutics, prejudicial to the patient. The errors in the use of digitalis may

be grouped together in six classes: 1. Prescribing digitalis in nervous disorders of the heart; 2. It is often prescribed in doses too large; 3. Sometimes the physician waits to prescribe it until symptoms of myocardial heart-block have reappeared; 4. The drug is stopped when the heart has recovered its contractility; 5. Success is expected from large doses when small doses have failed; 6. Small doses are prescribed for too long a time." It is under the conditions of 4, as Piessinger points out, that most of the clinical accidents, often fatal ones, have occurred. In fact a case somewhat similar is recorded by MacKenzie (*Diseases of the Heart*, p. 236). In estimating the cause of this effect Piessinger argues that the muscle of the heart is already exhausted, and yet it is aroused to an effort and called upon to put forth more energy and work by the stimulus of the drug. It does not require much imagination to perceive the result. The heart collapses suddenly as would any other muscular fibre if it had to do such constant work; for, except in the refractory phase, it is admitted that the muscle is normally always ready to respond to a stimulus. The actual point of application of this stimulus is said by Chio to be the vagus, in the tract which is the site of action of atropine, which prevents the diastolic arrest produced by digitalis (*Achivo di Fisiologia*, May, 1916.) All the effects of digitalis increase the kinetic energy of the heart, and consequently the work of the ventricle, and it is a proof of the wonderful potential power of this organ that over-stimulation is not oftener fatal.

Vaquez sums up the matter by saying that in these circumstances "digitalis is the cause of the very trouble it is intended to remove." The effects are often overlooked because digitalis poisoning is not common, except (as Taylor observes) "in the shape of overdoses given medicinally but injudiciously, which produced unpleasant symptoms, and probably hastened the end in many cases of heart disease. Sir Thomas Stevenson has seen a patient under the influence of digitalis die very suddenly on being raised by the nurse from the recumbent to the sitting posture."

This statement exactly describes what happens, but it has never been made clear whether digitalis or some of its constituents was the toxic agent. One reason for this obscurity is the habit which many writers have of speaking of digitalis, as digitalin, digitoxin, or some other

constituent of the leaf. An eminent writer on pharmacology has labored hard to prove that the members of the group, antiarin, strophanthin, neriine, digitalin, digitoxin, and digitalein are "pure substances, and the inference of course, is that their effects are uniform. He lays much stress on their common property of resting the heart. Adopting this argument as a basis for practice, he conjectures that the effect of digitalis is nothing but the combined action of digitalin, digitoxin, and digitalein. The view of Focke and Ziegenbein is somewhat different. "The power of the leaves is not equivalent to the proportion of digitoxin in them." This appears to be the opinion of Kosmann, and it is supported so far as may be judged by the facts of poisoning. As reported by Tardieu-Roussin, Casper, v. Jaksch, and many others, a decoction of digitalis has a poisonous property of its own. The toxic characters of the most powerful of the constituents of digitalis, digitalin, and digitoxin are not clearly defined. "The extractives," writes Mackenzie, "which go under such names as digitalin, digitoxin, strophanthin, we have not used—because they are not sufficiently definite to be recognized." However, the case of Koppe, poisoned by a dose of 1/34th of a grain of digitoxin, is significant.

The evidence, though not of the clearest nature, shows that digitalis is probably responsible for far more fatal accidents than is commonly believed. Its great defect from this point of view is its property of being excreted much faster from the stomach than from the kidneys, which has led to the name of cumulative poison. It seems, however, that this effect is not the chief cause of mischief, but the almost indefinable way in which it produces a collapse of the heart, indefinable at least except to those who have seen it.

THE CARE AND RE-EDUCATION OF CRIPPLES.

THE care and re-education of cripples, whether in military or in civil life, presents many problems to be overcome. *The American Journal of Care for Cripples* considers these problems, both from the point of view of the disabled and of society. It is not only the actual re-education which must be accomplished, but often it is the desire to be re-educated which

must be created in the first instance. In France the number of *mutilés* who are brought to realize the necessity of training themselves for future industrial life is increasing daily. In time, the sentiment and gratitude which now seeks to reward the heroism of the maimed by shielding him from the harsh severities of life, will no longer last, and the crippled soldier will be obliged to face reality, totally unfit, unless he accepts the chances which are now given to him to fit himself for a useful place in the world. Something more must be done than to provide mere training; in the schools themselves there must be a homelike atmosphere, and besides work, there must be also play and comfort, and regard for the soldier's individual interests.

The Vocational School for Disabled Soldiers at Nantes, France, has made successful experiments which are worthy of mention. In September, 1914, the municipality of Nantes organized a hospital for the wounded, and in 1916, it was given over entirely to convalescent patients. Without news from their families, with their physical capacities greatly reduced by their injuries, these men awaited the end of the war a prey to dark discouragement and anxiety. Efforts to better their condition by teaching the men trades showed results in a surprisingly brief time, and with the renewal of their energy, the men ceased to regard themselves as human waste and became active, skillful workmen. A re-educational school was organized and the government stood ready to support it. This training was far superior to the system of training disabled men by placing them as apprentices in private shops, where no attempt was made to adapt the work to the physical powers of the apprentice nor to grade it according to his capabilities. The trades taught are: locksmithing, carpentry, watch and clock making, basketry, sabot, elg, and shoemaking, and tailoring. A commercial course was organized to train men as bookkeepers, business clerks, and civil service employees. The length of the training course is twelve months, and after the first three months, pupils are allotted fifty per cent. of the value of their labor on any piece of work having market value. In the interests of the school, breaches of discipline have to be punished; but the morale of the pupils, as a rule, is excellent. Up to the present time, the school at Nantes has experienced no difficulty in placing its pupils and none have been placed at eut wages.

In South Africa, the problems which arose in connection with her disabled soldiers were exceptional. At the outbreak of the war, South Africa had no facilities for manufacturing modern artificial limbs, and only insufficient means for the technical education of the civil population. A Vocational Training School has been established in connection with the hospital in Richmond Park, and training is given in the workshops to enable the men to become expert workmen in a large number of trades. Highly skilled professional instructors are employed, a fact which makes the men realize that an extraordinary opportunity is being afforded them. Three factors are considered in determining the patient's future career: (1) the man's own inclination; (2) his physical disability; (3) his suitability from an educational standpoint. Approximately ninety per cent. of those disabled, for whom vocational training is appropriate, voluntarily take advantage of opportunities afforded them.

In every country, in rehabilitating disabled soldiers for civilian life, there are distinct social responsibilities which must be recognized. In addition to medical treatment, re-educational treatment, and a manifestation of the best spirit among the men, a constructive, and not a demoralizing, influence must be exerted by the family, the employer, and the community at large in order to insure the complete success of the program. The first responsibility on the part of the family of the injured man is to see the hopeful rather than the depressing aspect. Families should know of the possibilities of re-education and re-employment and of the provisions being made for the disabled. The second responsibility of the family is to understand the importance to the disabled soldier of the proffered training for self-support, and to encourage him in every possible way to undertake it. It is the duty of the family to stand behind the man during his course of training and to try in every way to encourage rather than dishearten him, and to make the home influence as truly helpful as possible after his return from hospital or school.

In the readjustment of the crippled soldier to civilian life, the employer has a very definite responsibility. It is a mistake to be willing, from patriotic motives, to find for ex-soldiers any odd jobs which are available, regardless of whether the men can earn their wages or not. For the disabled man a constructive job must be found,

which he can hold on the basis of competence alone. Working in this way, he can be self-respecting, happy, and can look forward to a future. Employers should study the jobs under their jurisdiction to determine what ones might be satisfactorily held by cripples, and give cripples preference for these jobs.

The responsibility to the disabled soldier on the part of the community at large is more complex. Hero-worship and inappropriate entertainment are to be avoided. But perhaps the greatest injury which the general public can do to the disabled soldier is to foster the prejudice against the disabled, the incredulity as to possible usefulness, the apparent will to pauperize, and the reluctance through usual channels of opportunities to give the handicapped man a chance. The handicap of public opinion is a greater obstacle than amputation of limb or loss of sight. In the words of John Galsworthy:

"This comrade of ours is not your puppet. He shall yet live as happy and as useful—if not as active—a life as he ever lived before. Do your worst; you shall not crush him! We shall tend him from clearing station to his last hospital better than wounded soldier has ever yet been tended. In special hospitals, orthopedic, paraplegic, phthisic, neurasthenic, we shall give him back functional ability, solidity of nerve or lung. The flesh torn away, the lost sight, the broken eardrum, the destroyed nerve, it is true, we cannot give back; but we shall so recreate and fortify the rest of him that he shall leave the hospital ready for a new career. Then we shall teach him how to tread the road of it, so that he fits again into the national life, becomes once more a workman with pride in his work, a stake in the country, and the consciousness that, handicapped though he be, he runs the race level with his fellows, and is by that so much the better man than they."

LABORATORY INVESTIGATION OF INFLUENZA.

We have received recently three reprints, by Major Lesley Spooner, M.D., describing the base hospital laboratory at Camp Devens and the bacteriological studies made at this camp during the influenza epidemic. The work of the base hospital laboratory presented itself in three distinct divisions: 1. sanitary bacteriology; 2. routine hospital diagnosis; and 3. technical training. The work in sanitary

bacteriology included not only the usual laboratory examinations of milk and water, but more especially the search for infectious disease carriers, and the usual practice of methods used in detecting meningitis, diphtheria, typhoid, malaria, and hookworm carriers, and gives a report on prophylactic inoculations and vaccinations.

All branches of hospital diagnosis have been centralized in one building, an arrangement which, although making it necessary for a large group to work in small quarters, has the advantage of affording closer supervision of work. Tabulated results of blood cultures for pneumonia show that 50 per cent. of cases showing positive blood cultures recovered, and only 2 per cent. of those with negative cultures died. In carrying out laboratory instruction, it has been found necessary to train officers and enlisted personnel in many phases of work to which they have not been accustomed.

The bacteriological study of the influenza epidemic at Camp Devens has been reported by Lesley H. Spooner, Joseph M. Scott, and Elmer H. Heath, Jr. The first cases of influenza were admitted to the hospital on September 7, and in the course of four or five days the disease had spread considerably. The report of this investigation includes a study of cultures from the lungs, accessory sinuses and heart's blood at necropsy, and those derived from the sputum, naso-pharyngeal secretions, pleural exudates, and blood of patients acutely sick with the disease. The technic employed and the morphology of the cultures are described. The investigators believe it reasonable to suppose that *B. influenzae* was the prime etiological factor in the epidemic, since it was found in such a large proportion of specimens of sputum when the latter was derived from the lower air passages and was properly examined; since the organism was recovered from lungs postmortem in 62 per cent. of those cases carefully studied, and in pure cultures from at least one lobe in 50 per cent. of the same series; and since the blood of patients convalescent from the disease showed a rising agglutinating power not only to their own organism, but also to heterologous cultures.

A third reprint describes the serum of Type 1 pneumonia. Spooner, Sellards, and Wyman found that the mortality of this group, when treated with serum of low titer during their entire course, or only in the last stages with high titer serum, was approximately double that

similarly treated before the epidemic. Patients treated with high titer serum during the entire disease showed a mortality of only 7 per cent.

The work done at the base hospital laboratory at Camp Devens and the bacteriological investigation carried on in connection with a disease which has assumed the seriousness of the recent influenza epidemic is of far-reaching importance, and we are fortunate to have available these reports of the results noted at Camp Devens.

MEDICINE IN THE THIRTEENTH CENTURY.

ONE of the most interesting, complete, and perhaps the earliest of literary accounts of medical history in England is the account of thirteenth century medicine presented by Gilbertus Anglicus in his "Compendium Medicinæ." This manuscript was brought to the attention of the Cleveland Medical Library by Dr. Henry E. Handerson, and published after his death by the editorial staff of the *Cleveland Medical Journal*. Gilbert was undoubtedly one of the most famous physicians of his time. We know few of the details of his life; he was probably born in about 1180 and received his early education in England. At the close of the twelfth century, he went to the Continent to complete his studies and then returned to England.

The Compendium is divided into seven books, and the classification follows the usual method of the day—from head to foot. The comprehensiveness of the book will doubtless surprise the modern reader; for besides general diseases, it includes consideration of physiology, physiognomy, ophthalmology, laryngology, otology, gynecology, neurology, dermatology, embryology, obstetrics, dietetics, urinary and venereal diseases, therapeutics, toxicology, operative surgery, cosmetics, and even the hygiene of travel and the prevention of sea-sickness. Of course the book is not free from the superstition of the age. For example, under medical treatment of goitre we find the following advice: "Dig out of the ground while chanting a *pater noster*, a nut which has never borne fruit. The roots and other parts pound well with two hundred grains of pepper, and boil down in the best wine until reduced in volume to one-half. Let the patient

take this freely on an empty stomach until cured."

Gilbert of England was not a surgeon, yet the surgical chapters of the Compendium present a more scientific and complete view of surgical art, as then known, than any contemporaneous writings of the Christian West, outside of Italy. In the Middle Ages, the practice of surgery in western Europe was generally regarded as disreputable, and operative surgery was for the most part relegated to butchers and executioners. Only in Italy did surgery vindicate for itself an equality with medicine. This study of English medicine in the thirteenth century shows a phase in the evolution of English medical history, and reflects the medical science of age and country.

YEAST IN DEFICIENCY DISEASES.

THERE has been manifested recently considerable interest in the use of yeast as a curative agent. Writers have called attention to the value of yeast in various dermatoses, constipation, and other conditions. In the matter of the so-called deficiency diseases, the etiology of these diseases as correlated with the ingestion or non-ingestion of certain food-stuffs has been a matter of current discussion. In considering vitamins and the diseases which may result from a deficient quantity of this substance, it has been pointed out that yeast is very rich in vitamin. Vedder has commented upon the existence of isomerism in yeast and its influence on antineuritic properties. Other writers have pointed out the relationships of scurvy, pellagra, and beri-beri, and it has been suggested that adult scurvy and beri-beri have many factors in common. In experiments on infantile scurvy, the effects of yeast have led several writers to the conclusion that yeast exercises an important effect upon the growth of children. Several writers report the successful use of various forms of yeast in gastroenteritis, with beneficial results to both infants and adults. Cures of chronic gastroenteritis and also of dysenteric diarrhoea have been reported. It is probable that yeast will exert a greater influence on the gastro-intestinal tract when it is given by mouth than when it is given by rectum alone. In some cases, the administration of bismuth or tannalbin may be combined effectively in this treat-

ment. Experiments are being made to test the curative value of yeast in many fields, and it presents an interesting subject for future observation and experiment.

MEDICAL NOTES.

INFLUENZA IN THE UNITED STATES.—Health reports for the week ending February 15, 1919, indicate a general decline in the number of cases of influenza reported. Fewer cases were noted in Alabama, California, Connecticut, Florida, Illinois, Iowa, Kansas, Louisiana, Maine, New Jersey, North Carolina, Ohio, Oklahoma, and Virginia. Arkansas and Vermont reported increases, but the number was not large, and both States show decided decreases as compared with the reports for the week ending February 1. Reports from the zones surrounding Army camps indicate that a slightly smaller number of cases was reported than during the preceding week. With local variations, the number of cases of influenza reported has declined since about the middle of January in all parts of the country from which reports have been received.

PREVENTION OF BLINDNESS.—The fourth annual report of the National Committee for the Prevention of Blindness records the activities of the organization during the year 1918. Classes for the conservation of vision in the public schools have been established. In Massachusetts, the first class was organized, and in that State ten classes are now being conducted by the methods peculiarly adapted to the children of defective vision, who would otherwise be a neglected group in the school system. Special methods and appliances are needed for this class of people who are not totally blind. Cities in Ohio and New York, and perhaps in other States, have provided for these classes. In several States, legislation in the interest of conservation of vision has been secured. Virginia, Louisiana, and Georgia have joined the States having laws for preventing blindness by ophthalmia neonatorum. At least twenty-four States have carried forward prevention of blindness work to some extent, and assistance and advice have been sought by foreign countries. During 1918, 148 lectures were given to audiences aggregating 42,914 people. The commit-

tee has been active in arranging exhibits and in distributing posters and publications. Tables showing the causes of blindness in thirty-four state schools for the blind are included in this report.

SOCIETY FOR THE ADVANCEMENT OF CLINICAL STUDY IN NEW YORK.—A bulletin is issued daily announcing the operations and clinics in the principal hospitals in Greater New York and a Bureau of Information is maintained at the Academy of Medicine, thus making general clinical study easy in this city.

A special endeavor is made to show courtesies to those military surgeons who are temporarily in the city. Daily bulletins will be sent free to them for limited periods if they will send their addresses to the Society for the Advancement of Clinical Study, 17 West 43d street, New York, N. Y.

DEATH RATE IN THE UNITED STATES ARMY.—A report of the Surgeon-General for the week ending January 20 indicated that the health of the troops in the United States continues good. The death rate for disease during that week among the troops in this country was 9.6, as against 9.8 the preceding week. The rate for the week of February 28 of last year was 6.6. There were 107 deaths from all causes the week of February 28, as against 119 the preceding week.

The sick and death rate will continue to be relatively high as the troops are further demobilized, as only the well men are discharged. Another factor that will contribute to a continued high rate here is the constant influx of sick and wounded to this country from overseas.

Pneumonia is increasing in the American Expeditionary Forces, 1,500 new cases having been reported for the week, as compared with 1,289 for the preceding week.

DRUG PRICE CHANGES.—The chief fact to be noticed in regard to the market for pharmaceutical drug products is the manufacturers' announcement of a downward revision in prices for all mercurial preparations as the result of the lowering of the values of quicksilver to a basis of \$80 per flask. The reduction was about on the average with that announced on February 11, the new schedule quoting calomel 11 cents down and corrosive sublimate 4 to 11 cents lower.

Citrate of soda was advanced to the extent of 20 to 30 cents by leading manufacturers as the previous selling schedule was out of line with the raw material.

Glycerine markets are holding steady on the basis of 18 cents a pound for the chemically pure fluid in drums with usual premium asked for cans and other containers. In view of the scarcity of citric acid, which is keeping the price at \$1.25 a pound, minimum, there has been some increase in the demand for substitute products, especially tartaric acid. The views of the trade on cream of tartar have also strengthened somewhat and the range of prices now extends from 58 to 63 cents a pound.

SUICIDES IN THE ARMY.—Statistics compiled by the War Department show that from the date of the entry of the United States into the war to February 21, 1919, there were 339 suicides in the army. 193 of these occurred in the United States and 146 overseas. The figures are below the average per thousand in civil life during the years of 1914-15-16.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending March 8, 1919, the number of deaths reported was 300, against 298 last year, with a rate of 19.64, against 19.88 last year. There were 50 deaths under one year of age, against 42 last year.

The number of cases of principal reportable diseases were: Diphtheria, 56; scarlet fever, 44; measles, 5; whooping cough, 8; typhoid fever, 2; tuberculosis, 61.

Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 7; tuberculosis, 7.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever 1; typhoid fever, 1; tuberculosis, 28.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 4.

Influenza cases, 176; influenza deaths, 33.

INFLUENZA IN BOSTON AND MASSACHUSETTS.—On March 6, there were reported to the Boston Health Department 24 new influenza cases with 4 deaths, and 12 cases of pneumonia with 8 deaths. On March 7, 25 cases of influenza and 16 of pneumonia were reported, and the deaths numbered 8 of influenza and 4 of pneumonia. On March 8, 27 new influenza cases with 1

death, and 12 lobar pneumonia cases with 3 deaths were reported to the Boston Health Department. On March 9, there were reported 6 cases of influenza and 6 of pneumonia, with 2 deaths from influenza and 6 from pneumonia. On March 10, 13 new cases of influenza, with 2 deaths, and 1 new case of pneumonia and 5 deaths were reported.

EXAMINATION OF DRUG SAMPLES.—During the month of February the food and drug division of the Massachusetts State Department of Health collected and examined 1,069 samples. Of these samples, 936 were samples of milk, 77 of foods, and 28 of drugs. The police departments submitted 21 samples of liquor and 7 samples of narcotics. There were 44 adulterated milk samples, 2 adulterated food samples, and 17 adulterated drug samples.

Thirteen cases were tried during the month and \$530 in fines paid. Cases were tried in Newburyport, New Bedford, Lowell, Pittsfield, and Worcester.

NEW MEDICAL SOCIETY.—At a meeting of physicians of Rutland, Paxton, Princeton, Sterling, West Boylston, Hubbardston, and Holden, the Wachusett Medical Improvement Society was formed recently. The object of this organization is to "promote the professional and social relations of the members and advance the medical interests of the towns represented."

The following officers were elected: President, Dr. Elisha E. Lewis, Captain, M. R. C., of Princeton; secretary and treasurer, Dr. Ransom A. Race of Paxton. These two with Dr. Washburn will constitute the executive committee. Dr. Harry W. Trask, Lieut. M. R. C., of W. Boylston, gave a talk on "Experience in Training (Camp and Field Hospital)," which was much enjoyed. Capt. Lewis will address the society at its next meeting to be held on March 5 at the home of Lieut. Trask, on "The Venereal Disease Campaign as Promulgated by the War Activities Committee."

TRANSFER OF SURGEONS TO NORTHEASTERN DEPARTMENT.—Three surgeons have recently been transferred to the Northeastern Department. Colonel H. D. Snyder, M.C., who has been on duty with the Army Medical Supply Department, Chicago, will go first to Fort Ethan Allen, Vermont, and will then return to Boston. Major Bertrand D. Ridlon, M.C., who has been

on duty at Camp Johnston, Jacksonville, has been appointed senior doctor at Fort Williams, Portland Harbor. Lieutenant H. Ellsworth Gillett, M.C., who has been on duty at Camp Dix, reported for service in Boston as an assistant in the Northeastern Department medical offices.

EUROPEAN SURGEONS IN BOSTON.—Five European surgeons are visiting this country on the invitation of the Red Cross Institute for Crippled and Disabled Men in New York. Professor V. Putti of Bologna, Dr. Andre Treves of Paris, and Dr. Louis Alleman of Brussels are distinguished experts in orthopedic surgery. Dr. Maurice Bourillon is also an orthopedic surgeon and has written a book on the science of the rehabilitation of men injured in war. Dr. Dronsard is director of a rehabilitation school in southern France. These men are now visiting Boston, partly to describe what is being done in reconstruction work in France, Belgium, and Italy, and partly to visit reconstruction hospitals in this and in other States. Harvard, the Massachusetts General Hospital, and the institution on Parker Hill, where many of our returned wounded are being cared for, will be visited. The officers of the industrial accident board, which has charge of the work of retaining the victims of industrial accident, will also be of interest to these surgeons. After a few days, they will leave Boston and visit successively New York, Washington, and Philadelphia.

APPRECIATION OF WORK OF CITY HOSPITAL NURSES.—At a meeting of the board of trustees of the Boston City Hospital called to thank publicly the nurses who have worked during the influenza epidemic, it was stated that more than 2700 cases were treated at the hospital, that in the treatment of the disease more than 125 nurses contracted it, and that 9 of them died as a result of it. In an address, Dr. Henry S. Rowen is reported to have said in part:

"Very briefly and very inadequately the trustees desire to offer in this public manner their appreciation of the nursing staff of this hospital during the past fall and winter in combating the epidemic, now more or less quiescent. We desire to express fully our feelings of deep appreciation of the large share of the work you have borne during this very serious and trying time. We know that all of you from the

superintendent down to the probationer have given of your best, that many of you have been invalidated and not a few have made the supreme sacrifice. The trustees again wish to express their sorrow at the loss of so many brave women who died during this period in the execution of their dangerous duty.

"Owing to the war conditions the shortage of male help has been extreme, adding considerably to the stress of your labors. In no small way these obstacles were overcome largely by your generous willingness.

"The trustees desire further to express their appreciation of those among you who felt it their patriotic duty to fit themselves to serve their country best by responding to the call for preparation for the care of the sick and wounded, and in particular to that group of young college women who came to us when our needs were greatest. For the endurance of hardships entailed in combating this unparalleled epidemic and for the devotion you have shown in your beneficent work, and for the high sense of courage you have exhibited, this board in behalf of the citizens of the community, extend their heartiest congratulations to each and every one of you."

RETURN OF LIEUTENANT-COLONEL DOWLING.—Lieutenant-Colonel John J. Dowling, head of Boston City Hospital No. 7 Unit, is returning with twenty-five officers and about two hundred men, and will probably arrive in New York on March 28. The nurses' alumni, and possibly the hospital trustees, are planning a reception for the men on their return.

BENEFITS OF THE FRAMINGHAM DEMONSTRATION.—In the *Bulletin of the National Tuberculosis Association*, the direct benefits which the community has derived from the Framingham Demonstration are summarized. Among the more important results of this health demonstration, the following statements deserve particular attention:

More than 6,000 Framingham citizens have been examined through the Health Station alone, and several thousand of these have been referred to the local physicians for treatment. In addition, the Health Station has, through its own machinery, followed up groups of cases, such as the nose and throat condition among children, and has made every effort to have these conditions corrected.

An intensive search has been made for tuberculosis. Whereas there were 27 cases known when the Demonstration started, there have been under care or advice since January, 1917, approximately 250 cases, many of which have become arrested and are following normal industrial pursuits.

Out of the tuberculosis work has grown an expert consultation service, used now by practically all of the physicians in Framingham. Last year alone this consultation service was responsible for the discovery of approximately 60 cases of tuberculosis, as a result of the aid given local physicians. Part of the time of the consultation service has been devoted to the draft board work, practically all questionable pulmonary cases being gone over by a Health Station representative.

Assistance has been given the community in meeting the influenza situation, by providing extra equipment for both the hospitals, by aiding in the development of the community plan for controlling the situation, by providing two nurses for hospital and district service, by providing an expert medical consultant for diagnosis and treatment, by providing examination facilities for the factory employees before their return to industry.

Several hundred dollars have been devoted to the provision of additional x-ray equipment at one of the hospitals, placed at the service of local physicians, and used by the Health Station in the diagnosis of tuberculosis and other conditions.

In order to benefit infant welfare, assistance was given in financing an extensive Baby Week, and the salary of the infant welfare nurse has been met since the beginning of the Demonstration to date. Many children of pre-school age have been examined in the medical examination work, many have been followed up by nurses to secure the correction of defects, and several hundred children have been provided with summer camp facilities during the two summers of the Demonstration. The Demonstration has agreed to pay the salary of a dental nurse for several months for the benefit of school children.

In factory work, educational literature has been provided for the industries on tuberculosis, general health, and influenza, and advice has been given in regard to the development of factory and medical service.

An extensive educational campaign, through

the use of leaflets, special bulletins, exhibits, health letters, provision of Forum speakers, etc., has aided in the development of hygienic practices among all ages and all types of people in Framingham.

A special study of the local milk situation has been made through the operation of government officials, and plans are being worked out at the request of local producers for the improvement of the economic and sanitary aspects of milk handling in Framingham.

Perhaps the most conspicuous result of the work has been the success which has marked the Demonstration's efforts to have the community meet its own obligations along health lines. The results in this regard have demonstrated that the average American community may be depended upon to do its part in such a plan.

The Framingham health program is both an experiment and a demonstration. Many devices and measures are being experimented with in order to determine their relative value in the prevention of sickness and unnecessary death. The Framingham experience is encouraging, in that it shows that, while this type of work, in so far as it is useful, will directly benefit the community during the period of demonstration, there is, further, every reason to believe that the community will see the value of the work and will endeavor to carry it on under permanent local auspices.

VENEREAL DISEASE.—The following letter has been issued recently by the State Department of Health of Massachusetts and has been distributed to the members of the medical profession:

"Last February we addressed a letter to you calling your attention to the then new regulations requiring the reporting to the State Department of Health of the so-called venereal diseases, syphilis and gonorrhea.

We feel that it may be of interest to you at this time, after ten months of the operation of this law, to learn to what extent this part of the program has achieved its purpose of disclosing the location of cases of these communicable diseases. The total number of cases reported in the routine manner, namely, by serial number, up to February 1, 1919, is 11,864.

The greatest skeptic cannot deny that this is a creditable demonstration of the manner in which the physicians of this State are coöperating with the local boards and with our own de-

partment in the program for the solution of this difficult public health problem.

In spite of the above tangible evidence of the coöperation of the profession as a whole, we are, nevertheless, aware that many physicians are even now not reporting their cases of syphilis and gonorrhea. In some such instances there was apparent failure to receive the original supply of report blanks, serially numbered, from this office; in others we fear the copy of the regulations and blanks met the fate of many another budget of the busy practitioner's mail—the waste basket. In view of this fact we now ask that every physician who, for the above or for any other reason is not supplied with proper blanks and all necessary information with regard to reporting syphilis and gonorrhea, will do us the favor of sending his name and address with the request that he receive all or any part of the outfit sent out to the profession last March. The outfit sent at that time consisted of:

1. A copy of the regulations.
2. Sets of blanks for syphilis and for gonorrhea, with attached instruction sheet to be given to the patient.
3. Blank letters for notification of this Department in case the patient lapses treatment.
4. Blank letters for notification of the physician last treating the case when the patient has recently come under another physician's care.
5. A letter explaining the individual physician's part in the successful carrying out of this program.

We hope that the resources of this office may be taxed to the utmost by the many calls that will result from this reminder of the law regarding the reporting of syphilis and gonorrhea, and that we may thereby be spared the mutually obnoxious method of stimulating regard for the law by the painful spectacle of a member of the profession being called before the courts for neglect of duty.

We believe in the universal desire of our fellow physicians to do their part in this struggle against an age-old and strongly entrenched enemy to human progress and well being.

One detail which we find often overlooked, even by careful physicians, is the last section of the regulations, which reads as follows:

'9. Whenever, in the opinion of the physician reporting the case, because of circumstances or conditions present, the protection of the pub-

lic health demands immediate action by the local board of health, he shall forthwith report the facts as prescribed in Regulation 7 to the State Department of Health, which shall, in turn, proceed as prescribed in Regulation 8. (Adopted at a meeting of the Public Health Council, May 21st, 1918.)'

We urge that you follow the requirement of this section to the letter, in order that this Department may lose no valuable time in setting in motion the wheels of the machinery that may bring the dangerous fugitive back under treatment."

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.
—The work of the Instructive District Nursing Association during the past year merits especial commendation. This organization has proved itself capable of tremendous expansion in an emergency, and was one of the most active agencies in combating the influenza epidemic. The field of usefulness of the association is growing so rapidly that its activities during the coming year will include the opening of four additional branch stations, and it is hoped that it will be possible to add more nurses, more Ford cars, and more neighborhood committees to its present facilities in order to make public health nurses available to every family in every neighborhood in Boston—an ideal condition which has not yet been attained in spite of the ten stations already established in this city.

During the year 1918, 250,000 visits were made, an increase of 53,213 over the preceding year. During the epidemic of influenza, nursing care was given 7,504 patients, to whom 37,451 visits were made. The results of the after-care given to children suffering from infantile paralysis have been gratifying. Of 177 such children referred to the association by the Harvard Infantile Paralysis Commission, 53 are practically cured and 99 are much improved and are still improving. Of 36 children who were unable to walk when they came under the care of the association, all but three have now regained the ability to walk.

Care was given to 14,048 Boston children during 1918. A baby clinic in Hyde Park and another in Brighton were conducted and 8655 visits were made to the mothers in the homes of these babies. In July, the association established a dietetic bureau in connection with the League of Preventive Work. The experiment made in preventive dentistry in Hyde

Park is worthy of particular attention. Among 485 children of the first and second grades in the public schools, it was found that ninety-five per cent. had dental defects. The association believes that it would be practical to extend this work to other parts of the city.

During the year 1918, the expenses of the association were \$134,000, an increase of \$40,000 over the preceding year. The increased demands for its services, taken in connection with increases in salaries, have made necessary a total budget for 1919 of \$210,000 involving an increase of about fifty per cent. Among the gifts received during the year was one of \$21,000 given by friends in memory of Miss Helen Homans, who died while nursing in France. The income of this gift will be used for the support of a nurse.

It is to be hoped that the Instructive District Nursing Association will receive whatever support and coöperation it may need in carrying out its worthy undertakings.

Obituary.

FRANK WELLS, M.D.

DR. FRANK WELLS, who was for nearly forty years medical director of the John Hancock Life Insurance Company, died March 4, 1919, in the seventy-seventh year of his age. He was born in Boston on October 11, 1842, the son of Charles Bartlett Wells and Maria Louisa (Binney) Wells. He prepared for Harvard at the Boston Latin School, and was graduated from Harvard in 1864 and from Harvard Medical School in 1868. In the following year he received a medical degree from Vienna.

In September, 1862, while in his junior year in college, he enlisted in the Forty-fifth Massachusetts Regiment and served until September, 1863. On his graduation he served on the staff of General Lockwood. After further study of medicine in Dresden, Vienna, Paris, and London, Dr. Wells returned to this country, practised in Andover, and moved to Cleveland, O. While in Cleveland he accepted a chair in the Cleveland Medical School and was a visiting physician at the Cleveland City Hospital. He was also health officer of the city.

Dr. Wells returned to Boston in 1878 to re-

sume the practice of medicine, later practising in Brookline. In 1882 he was appointed medical director of the John Hancock Life Insurance Company. From 1891 to 1894 he was president of the National Association of Life Insurance Medical Directors. For several years he edited the registration reports of Massachusetts. For some time he served as vice-president of the Massachusetts Infants' Asylum and as vice-president of the Massachusetts Emergency and Hygiene Association. He was on the executive committee of the Boston Provident Association and chairman of the school committee of Brookline. He had been a Fellow of the Massachusetts Medical Society since 1878.

He was the author of a book, "Filth in Relation to Disease," and he published a volume of lectures on "Social Hygiene" delivered before the teachers of the Boston schools. He was a member of the Somerset Club and the Harvard Club, and for many years belonged to the Union Club. In 1870, in Paris, he married Gertrude Huidekoper, daughter of Edgar Huidekoper of Meadville, Pa. Mrs. Wells and three children, George D. Wells and Edgar H. Wells, of Boston, and Mrs. J. H. Stabler, of Washington, survive him.

Miscellany.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.

At recent meetings of the Boston Society of Neurology and Psychiatry the following resolutions were adopted:

Be It Resolved: That it is with profound sorrow and a deep and abiding sense of loss that the Boston Society of Neurology and Psychiatry enter upon its records the death of its former member, Dr. Frank Chase Richardson.

Immediately subsequent to his graduation in 1879, Dr. Richardson's bent led him to select neurology as his special field. This was a choice well suited to his temperament, and here his early attainments, augmented by his studies at home and abroad and his ever-widening service, soon merited that recognition for high professional ability which he always enjoyed and which successive years but strengthened.

In each of his many years of service, as Pro-

fessor of Nervous Diseases at Boston University School of Medicine, as chief of the neurological clinic at the Out-Patient Department of the Massachusetts Homeopathic Hospital, as neurologist to that hospital, and as director of the Evans Memorial. Dr. Richardson gave of his knowledge and skill to hundreds.

With a personality always awakening both respect and affection, Dr. Richardson's kindly understanding, his wise counsel, and his helpful judgment will be greatly missed, but the remembrance of these and his other qualities will live and be always treasured by his many friends and associates.

Resolved: That these resolutions be spread upon the records of this Society and that a copy be transmitted to Dr. Richardson's family.

HENRY M. POLLOCK,
PHILIP COOMBS KNAPP.

Whereas, in the death of Dr. James Jackson Putnam the medical profession and this Society have lost one who could ill be spared; a descendant of pioneers, and himself a pioneer in his chosen field; who saw neurology advance from modest beginnings until it took its place among the leading branches of medical science, an advance in which he took no inconsiderable part, and

Whereas, the members of the Society not only mourn the loss of a distinguished colleague, but feel themselves bereft of a staunch friend and companion of peculiar charm,

Resolved, that the Society enter upon its records the death of Dr. James Jackson Putnam, and send to the family, with heartfelt sympathy, this expression of our esteem and sorrow.

G. L. WALTON,
W. E. PAUL.

Correspondence.

REHABILITATION OF THE DISABLED.

New York, February 24, 1919.

Mr. Editor:—

I should like to call to the attention of your readers a conference on the rehabilitation of the disabled which is to be held in New York City, from March 18 to 22 inclusive.

This conference, which will be international in its representation and the scope of subjects discussed, should have a special interest for the members of the medical profession, and for all those who play a part

in the restoration of the disabled to the best possible physical condition.

The experience of America and that of the allied governments in occupational therapy, functional restoration, the fitting of artificial limbs, compensation, vocational re-education, and kindred subjects, will be reported upon by experts in those fields.

The conference will be held under the auspices of the Red Cross Institute for Crippled and Disabled Men, and that part of the program relating to the work for blinded soldiers will be directed by the Red Cross Institute for the Blind. Two of the evening meetings will be held in Carnegie Hall and will be open to the public.

Representatives of practically all the governmental agencies in the allied countries dealing with disabled soldiers will attend; acceptances have already been received. Among the authorities to be represented are the British Ministry of Pensions, the French National Institute for War Cripples, the Belgian Military Institute for Crippled Soldiers, the Italian Ministry of Pensions, the Canadian Invalided Soldiers' Commission, the Australian Department of Repatriation, and the Bureau of Re-education and Reconstruction of the American Red Cross in France, in addition to other individual organizations in the respective countries.

Among the authorities in the United States which have promised representation are the Federal Board for Vocational Education, which is providing for American disabled soldiers training for self-support; the Division of Physical Reconstruction of the Office of the Surgeon-General of the Army, which is providing restorative treatment and education during the convalescent period; the Bureau of War Risk Insurance, which furnishes artificial limbs to amputated soldiers of the American Expeditionary Force and pays disability compensation; and the American Red Cross Department of Civilian Relief, which, through its home service section, provides social after-care for disabled men.

The gathering will be unofficial in the governmental sense, but scientifically of great authority, as many of the leaders in the rehabilitation work abroad will come to the United States for the first time to attend its sessions. Their presence here will afford opportunity to American workers in the same field to draw upon the experience of the foreign delegates for the solution of local problems.

While activities in behalf of the disabled soldier will figure largely in the program of both popular and scientific sessions, the interests of the disabled industrial worker will come in for a considerable share of attention. The invitations to the conference designate it as a "conference on the rehabilitation of the disabled man," civilian as well as military. Although the concentration of interest on the injured soldier has been responsible for the revolutionary change in national policies toward the disabled—whereby chief dependence is placed no longer on pensions but rather on the training of men to earn their own living—it is being generally recognized that many more men are disabled annually in industry than have been incapacitated by military service. It is the present aim of authorities having an interest in the cripple in general to apply to the treatment of the disabled civilian the same methods as have been developed to meet the needs of the invalided soldier.

One of the aims of the conference will be to direct public attention to the economy of putting disabled men back on the payroll rather than permitting them to exist in idleness, supported by war pensions or workmen's compensation.

The plans of the various allied governments for the supply of artificial limbs to amputated soldiers, is one of the subjects slated for consideration. The advantages of the adoption of a standard type of leg and arm will be reported upon in detail.

Among the American authorities who will speak at the various sessions are: Col. Frank Billings,

chief of the division of physical reconstruction of the Office of the Surgeon-General of the Army; Lieut.-Col. James Bordley, in charge of work for blinded American soldiers and sailors; Lieut.-Col. Harry E. Mock, in charge of convalescent centers for the Surgeon-General; Dr. Charles A. Prosser, director of the Federal Board for Vocational Education; Dr. J. A. C. Chandler, chief of the rehabilitation department of the same Board; Mr. T. B. Kidner, formerly vocational secretary of the Canadian Invalided Soldiers' Commission and now attached to the staff of the Federal Board; Mr. Curtis E. Lakeman, director of the division of after-care of the Department of Civilian Relief of the American Red Cross; Lieut.-Col. Charles E. Banks, chief medical adviser of the Bureau of War Risk Insurance; and Dr. R. M. Little, of the American Museum of Natural History.

Very sincerely,

DOUGLAS C. MCMURTRIE, *Director.*

AN ADDITIONAL HORROR OF WAR.

Mr. Editor:—

My classmate and friend, Dr. William Pearce Coues, has recently called to my attention a small volume entitled *Medical Diseases of the War*. Its author is Arthur F. Hurst, M.A., M.D. (Oxon.), F.R.C.P. This little book has so many excellent qualities that distinguish it from other works of the sort that it deserves the sympathetic consideration of the profession at large. On these qualities I shall not comment further than to signalize the presence from cover to cover of an edifying fusion of science and sound sense.

This communication is in nowise intended as a review. Its purpose is to express hearty approval of what Dr. Hurst has to say about a form of psychic malpractice—psychoanalysis—to which are subjected a certain number of soldier men who risked life and limb in the conflict which, we trust, will ultimately make the world a safe and decent abiding place.

Dr. Hurst says: "A number of Freud's disciples have expressed their opinion that war neuroses are due to unconscious mental conflicts, mostly of a sexual character, and that they should be treated by means of psychoanalysis. . . . I have seen a considerable number of medical case sheets of soldiers who had been in charge of psychoanalysts. In almost every case an attempt appears to have been made to discover some sexual origin of the symptoms, obvious causes such as shell shock and the stress and strain of active service being more or less ignored. Some form of 'Oedipus-complex' was suggested in many instances, simply because the patient had occasionally slept in bed with his mother when a small child, or because her death had caused him much distress. . . . The nasty ideas suggested by a sexual cross-examination and by psychoanalysis are bad enough, but I have seen still more deplorable results of the method. An unmarried sergeant, 26 years old, who was worn out and worried as a result of unaccustomed responsibility, was slowly improving with rest and encouragement, when his 'unconscious mind' was subjected to analysis. A petty larceny he had committed as a boy and had almost forgotten was raked up and in his somewhat emotional condition it caused him acute distress. He had never felt any great sexual desire, but was told on discharge from the hospital that he must indulge himself at least twice a week. He was readmitted a month later very much worse, as his mind was torn between the reluctance he felt to follow this advice, both on account of conscientious scruples and absence of desire, and fear that disobedience would result in insanity. At the same time he felt an almost irresist-

ible impulse to return to the hospital to murder the analyst of his 'unconscious mind.' Encouragement and occupation resulted in slow improvement, but he continued to hide himself at the approach of the Freudian medical officer under whose care he had originally been. . . ."

Upon reading the above passage, my heart went out in sympathy to the poor British Tommy, subjected, even in the wards of his own hospital, to the Hunnish atrocity of Freudianism. My exasperation on learning quite recently that the same unspeakable indignity is being practised in an American military hospital, upon our own wounded from overseas, is utterly beyond my powers of expression. And I take this opportunity to utter an emphatic note of protest in the hope that it may come to the attention of those responsible for the continuance of a practice which, to experienced and well-balanced medical men, is revolting in the extreme.

I hesitate to proffer advice to any learned disciple of Freud who, garbed in an American uniform, follows, in his ministrations to nerve-shattered American soldiers, the pernicious doctrines promulgated from Vienna. I would suggest to him, however, if he has difficulty in understanding why anyone, whether officer or doughboy, should have emerged from the concentrated inferno of modern war with nerves like pack-threads, that there is a much simpler and saner method of acquiring this understanding than through the process of mental and moral muck-raking advocated by Freud. I would have him talk with those wearers of the caduceus (much too seldom of the D. S. C. as well) who, with pack on back, hiked many weary days on end with our gallant fighting men, ate the same rations of monkey meat and hard-tack, slept in the same lousy billets, went with these men over the top and across the blood-soaked and shell-riven horror of No Man's Land and ministered to them where they fell. With the authentic and dependable knowledge of "nerves" thus obtained, the Freudian will have no need to descend, muckrake in hand, into the erotic slime of the apocryphal "unconscious mind."

Very sincerely yours,

J. W. COURTNEY.

SOCIETY NOTICES.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS.—Meeting at the Copley-Plaza Hotel, Boston, March 27, 7 P.M.

1. H. B. Eaton, M.D., U.S.A.M.C. Experiences at Belleau Wood, Champagne, and St. Mihiel, with Special Reference to the Psycho-Neuroses of War.
2. W. J. Daly, M.D., Boston City Hospital. The Psycho-Neuroses of Peace.

J. H. STEVENS, M.D., *Secretary.*

THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY.—Will meet at the home of Dr. Emily P. Howard, Van Dyke Street, near Peter Bent Brigham Hospital, Thursday, March 27, at 8 P.M. Speakers: Dr. Mary R. Lakeman, Epidemiologist; Dr. Lily Owen Burbank, Educational Organizer from the venereal disease section of the State Department of Health.

ALICE H. BIGELOW, M.D., *Secretary.*

NEW ENGLAND PEDIATRIC SOCIETY.—The fifty-eighth meeting of the New England Pediatric Society will be held at the Boston Dispensary, on Monday, March 31, 1919, at 8.15 P.M.

Clinical cases will be presented by members of the staff.

Dr. Maynard Ladd will speak briefly of his experiences in France.

WILLIAM E. LADD, M.D., *President.*
RICHARD H. SMITH, M.D., *Secretary.*

The Boston Medical and Surgical Journal

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Address.

FAREWELL ADDRESS OF DR. OLIVER WENDELL HOLMES TO THE MEDICAL SCHOOL OF HARVARD UNIVERSITY, NOVEMBER 28, 1882.*

I HAD intended that the recitation of Friday last should be followed by a few parting words to my class and my friends who might happen to be in the lecture-room. But I learned on the preceding evening that there was an expectation, a desire, that my farewell should take a somewhat different form; and not to disappoint the wishes of those whom I was anxious to gratify, I made up my mind to appear before you with such hasty preparation as the scanty time admitted.

There are three occasions upon which a human being has a right to consider himself as a centre of interest to those about him: when he is christened, when he is married, and when he is buried. Every one is the chief personage, the hero, of his own baptism, his own wedding, and his own funeral.

There are other occasions, less momentous, in which one may make more of himself than under ordinary circumstances he would think it proper to do: when he may talk about himself.

and tell his own experiences, in fact, indulge in a more or less egotistic monologue without fear or reproach.

I think I may claim that this is one of those occasions. I have delivered my last anatomical lecture and heard my class recite for the last time. They wish to hear from me again in a less scholastic mood than that in which they have known me. Will you not indulge me in telling you something of my own story?

This is the thirty-sixth course of lectures in which I have taken my place and performed my duties as professor of anatomy. For more than half of my term of office I gave instruction in physiology, after the fashion of my predecessors and in the manner then generally prevalent in our schools, where the physiological laboratory was not a necessary part of the apparatus of instruction. It was with my hearty approval that the teaching of physiology was constituted a separate department and made an independent professorship. Before my time, Dr. Warren had taught anatomy, physiology, and surgery in the same course of lectures, lasting only three or four months. As the boundaries of science are enlarged, new divisions and subdivisions of its territories became necessary. In the place of six professors in 1847, when I first became a member of the faculty, I count twelve upon the catalogue

* Republished, by request, from the issue of the JOURNAL for Dec. 7, 1882.

before me, and I find the whole number engaged in the work of instruction in the Medical School amounts to no less than fifty.

Since I began teaching in this school, the aspect of many branches of science has undergone a very remarkable transformation. Chemistry and physiology are no longer what they were, as taught by the instructors of that time. We are looking forward to the synthesis of new organic compounds; our artificial madder is already in the market, and the indigo-raisers are now fearing that their crop will be supplanted by the manufactured article. In the living body we talk of fuel supplied and work done, in movement, in heat, just as if we were dealing with a machine of our own contrivance. A physiological laboratory of today is equipped with instruments of research of such ingenious contrivance, such elaborate construction, that one might suppose himself in a workshop where some exquisite fabric was to be wrought, such as queens love to wear, and kings do not always love to pay for. They are, indeed, weaving a charmed web, for these are the looms from which comes the knowledge that clothes the nakedness of the intellect. Here are the mills that grind food for its hunger and "is not the life more than meat, and the body than raiment?"

But while many of the sciences have so changed that the teachers of the past would hardly know them, it has not been so with the branch I teach, or, rather, with that division of it which is chiefly taught in this amphitheatre. General anatomy, or histology, on the other hand, is almost all new; it has grown up, mainly, since I began my medical studies. I never saw a compound microscope during my years of study in Paris. Individuals had begun to use the instrument, but I never heard it alluded to by either professors or students. In descriptive anatomy I have found little to unlearn, and not a great deal that was both new and important to learn. Trifling additions are made from year to year, not to be despised and not to be overvalued. Some of the older anatomical works are still admirable, some of the newer ones very much the contrary. I have had recent anatomical plates brought me for inspection, and I have actually buttonholed the book-agent, a being commonly as hard to get rid of as the tar-baby in the negro legend, that I might put him to shame with the imperial illustrations of the bones and muscles in the great folio of

Albinus, published in 1747, and the unapproached figures of the lymphatic system of Mascagni, now within a very few years of a century old, and still copied, or, rather, pretended to be copied, in the most recent works on anatomy.

I am afraid that it is a good plan to get rid of old professors, and I am thankful to hear that there is a movement for making provision for those who are left in need when they lose their offices and their salaries. I remember one of our ancient Cambridge doctors once asked me to get into his rickety chaise, and said to me, half humorously, half sadly, that he was like an old horse,—they had taken off his saddle and turned him out to pasture. I fear the grass was pretty short where that old servant of the public found himself grazing. If I myself needed an apology for holding my office so long, I should find it in the fact that human anatomy is much the same study that it was in the days of Vesalius and Fallopius, and that the greater part of my teaching was of such a nature that it could never become antiquated.

Let me begin with my first experience as a medical student. I had come from the lessons of Judge Story and Mr. Ashmun in the Law School at Cambridge. I had been busy, more or less, with the pages of Blackstone and Chitty, and other textbooks of the first year of legal study. More or less, I say, but I am afraid it was less rather than more. For during that year I first tasted the intoxicating pleasure of authorship. A college periodical, conducted by friends of mine, still undergraduates, tempted me into print, and there is no form of lead-poisoning which more rapidly and thoroughly pervades the blood and bones and marrow than that which reaches the young author through mental contact with type-metal. *Qui a bu boira*,—he who has once been a drinker will drink again, says the French proverb. So the man or woman who has tasted type is sure to return to his old indulgence sooner or later. In that fatal year I had my first attack of authors' lead-poisoning, and I have never quite got rid of it from that day to this. But for that I might have applied myself more diligently to my legal studies, and carried a green bag in place of a stethoscope and a thermometer up to the present day.

What decided me to give up law and apply myself to medicine I can hardly say, but I had from the first looked upon that year's study as

an experiment. At any rate, I made the change, and soon found myself introduced to new scenes and new companionships.

I can scarcely credit my memory when I recall the first impressions produced upon me by sights afterwards become so familiar that they could no more disturb a pulse-beat than the commonest of every-day experiences. The skeleton, hung aloft like a gibbeted criminal, looked grimly at me as I entered the room devoted to the students of the school I had joined, just as the fleshless figure of Time with the hour-glass and scythe, used to glare upon me in my childhood from the New England Primer. The white faces in the beds at the hospital found their reflection in my cheeks, which lost color as I looked upon them. All this had to pass away in a little time; I had chosen my profession, and must meet its painful and repulsive aspects until they lost their power over my sensibilities.

The private medical school which I had joined was one established by Dr. James Jackson, Dr. Walter Channing, Dr. John Ware, Dr. Winslow Lewis, and Dr. George W. Otis. Of the first three gentlemen I have either spoken elsewhere or may find occasion to speak hereafter. The two younger members of this association of teachers were both graduates of our University, one of the year 1819, the other of 1818.

Dr. Lewis was a great favorite with students. He was a man of very lively temperament, fond of old books and young people, openhearted, free-spoken, an enthusiast in teaching, and especially at home in that apartment of the temple of science where nature is seen in undress, the anthropotomic laboratory, known to common speech as the dissecting room. He had that quality which is the special gift of the man born for a teacher,—the power of exciting an interest in that which he taught. While he was present the apartment I speak of was the sunniest of studios in spite of its mortuary spectacles. Of the students I met there I best remember James Jackson, Junior, full of zeal and playful as a boy, a young man whose early death was a calamity to the profession of which he promised to be a chief ornament; the late Reverend J. S. C. Greene, who, as the prefix to his name signifies, afterwards changed his profession, but one of whose dissections I remember looking upon with admiration; and my friend, Mr. Charles Amory, as we call him, Dr. Charles Amory, as he is entitled to be called,

then, as now and always, a favorite with all about him. He had come to us from the schools of Germany, and brought with him recollections of the teachings of Blumenbach and the elder Langenbeck, father of him whose portrait hangs in our museum. Dr. Lewis was our companion as well as our teacher. A good demonstrator is,—I will not say as important as a good professor in the teaching of anatomy, because I am not sure that he is not more important. He comes into direct personal relations with the students,—he is one of them, in fact, as the professor cannot be from the nature of his duties. The professor's chair is an insulating stool, so to speak; his age, his knowledge, real or supposed, his official station, are like the glass legs which support the electrician's piece of furniture, and cut it off from the common currents of the floor upon which it stands. Dr. Lewis enjoyed teaching and made his students enjoy being taught. He delighted in those anatomical conundrums to answer which keeps the student's eyes open and his wits awake. He was happy as he dexterously performed the *tour de maître* of the old barber-surgeons, or applied the spica bandage and taught his scholars to do it, so neatly and symmetrically that the aesthetic missionary from the older centre of civilization would bend over it in blissful contemplation, as if it were a sunflower. Dr. Lewis had many other tastes, and was a favorite, not only with students, but in a wide circle, professional, antiquarian, Masonic, and social.

Dr. Otis was less widely known, but was a fluent and agreeable lecturer, and esteemed as a good surgeon.

I must content myself with this glimpse at myself and a few of my fellow-students in Boston. After attending two courses of lectures in the school of the University, I went to Europe to continue my studies.

You may like to hear something of the professors of Paris in the days when I was a student in the *École de Médecine*, and following the great hospital teachers.

I can hardly believe my own memory when I recall the old practitioners and professors who were still going round the hospitals when I mingled with the train of students that attended the morning visits. See that bent old man who is groping his way through the wards of La Charité. That is the famous Baron Boyer, author of the great work on surgery in nine volumes, a writer whose clearness of style com-

mends his treatise to general admiration, and makes it a kind of classic. He slashes away at a terrible rate, they say, when he gets hold of the subject of fistula in its most frequent habitat,—but I never saw him do more than look as if he wanted to cut a good collop out of a patient he was examining. The short, square, substantial man with iron-gray hair, red face, and white apron is Baron Larrey, Napoleon's favorite surgeon, the most honest man he ever saw,—it is reputed that he called him. To go 'round the Hotel des Invalides with Larrey was to live over the campaigns of Napoleon, to look on the sun of Austerlitz, to hear the cannons of Marengo, to struggle through the icy waters of the Beresina, to shiver in the snows of the Russian retreat, and to gaze through the battle smoke upon the last charge of the red lancers on the redder field of Waterloo. Larrey was still strong and sturdy as I saw him, and few portraits remain printed in livelier colors on the tablet of my memory.

Leave the little group of students which gathers about Larrey beneath the glided dome of the Invalides and follow me to the Hôtel Dieu, where rules and reigns the master-surgeon of his day, at least so far as Paris and France are concerned,—the illustrious Baron Dupuytren. No man disputed his reign,—some envied his supremacy. Lisfranc shrugged his shoulders as he spoke of "*ce grand homme de l'autre côté de la rivière*," "that great man on the other side of the river," but the great man he remained, until he bowed before the mandate which none may disobey. "Three times," said Bouillaud, "did the apoplectic thunderbolt fall on that robust brain,"—it yielded at last as the old bald cliff that is riven and crashes down into the valley. I saw him before the first thunderbolt had descended. A square, solid man, with a high and full-domed head, oracular in his utterances, indifferent to those around him, sometimes, it was said, very rough with them. He spoke in low, even tones, with quiet fluency, and was listened to with that hush of rapt attention which I have hardly seen in any circle of listeners unless when such men as ex-President John Quincy Adams or Daniel Webster were the speakers. I do not think that Dupuytren has left a record which explains his influence, but in point of fact he dominated those around him in a remarkable manner. You must have all witnessed something of the same kind. The personal presence of some men car-

ries command with it, and their accents silence the crowd around them, when the same words from other lips might fall comparatively unheeded.

As for Lisfranc, I can say little more than that he was a great drawer of blood and hewer of members. I remember his ordering a wholesale bleeding of his patients, right and left, whatever might be the matter with them, one morning when a phlebotomizing fit was on him. I recollect his regretting the splendid guardsmen of the old Empire,—for what? because they had such magnificent thighs to amputate. I got along about as far as that with him, when I ceased to be a follower of M. Lisfranc.

The name of Velpeau must have reached many of you, for he died in 1867, and his many works made his name widely known. Coming to Paris in wooden shoes, starving, almost, at first, he raised himself to great eminence as a surgeon and as an author, and at last obtained the professorship to which his talents and learning entitled him. His example may be an encouragement to some of my younger hearers who are born, not with the silver spoons in their mouths, but with the two-tined iron fork in their hands. It is a poor thing to take up their mild porridge with in their young days, but in after years it will often transfix the solid dumpings that roll out of the silver spoon. So Velpeau found it. He had not what is called genius, he was far from prepossessing in aspect, looking as if he might have wielded the sledgehammer (as I think he had done in early life) rather than the lancet, but he had industry, determination, intelligence, character, and he made his way to distinction and prosperity, as some of you sitting on these benches and wondering anxiously what is to become of you in the struggle for life will have done before the twentieth century has got half way through its first quarter. A good sound head over a pair of wooden shoes is a great deal better than a wooden head belonging to an owner who cases his feet in calf-skin, but a good brain is not enough without a stout heart to fill the four great conduits which carry at once fuel and fire to that mightiest of engines.

How many of you who are before me are familiarly acquainted with the name of Broussais, or even with that of Andral? Both were lecturing at the École de Médecine, and I often heard them. Broussais was in those days like an old volcano, which has pretty nearly used up

its fire and brimstone, but is still boiling and bubbling in its interior, and now and then sends up a spirt of lava and a volley of pebbles. His theories of gastroenteritis, of irritation and inflammation as the cause of disease, and the practice which sprang from them, ran over fields of medicine for a time like flame over the grass of the prairies. The way in which that knotty-featured, savage old man would bring out the word irritation,—with rattling and rolling reduplication of the resonant letter *r*—might have taught a lesson of articulation to Salvini. But Broussais's theory was languishing and well-nigh become obsolete, and this, no doubt, added vehemence to his defence of his cherished dogmas.

Old theories, and old men who cling to them, must take themselves out of the way as the new generation with its fresh thoughts and altered habits of mind comes forward to take the place of that which is dying out. This was a truth which the fiery old theorist found it hard to learn, and harder to bear, as it was forced upon him. For the hour of his lecture was succeeded by that of a younger and far more popular professor. As his lecture drew towards its close, the benches thinly sprinkled with students began to fill up; the doors creaked open and banged back oftener and oftener, until at last the sound became almost continuous, and the voice of the lecturer became a leonine growl as he strove in vain to be heard over the noise of doors and footsteps.

Broussais was now 62 years old. The new generation had outgrown his doctrines, and the professor for whose hour the benches had filled themselves belonged to that new generation. Gabriel Andral was little more than half the age of Broussais, in the full prime and vigor of manhood at 37 years. He was a rapid, fluent, fervid, and imaginative speaker, pleasing in aspect and manner,—a strong contrast to the harsh, vituperative old man who had just preceded him. His "*Clinique Médicale*" is still valuable as a collection of cases, and his researches on the blood, conducted in association with Gavarret, contributed new and valuable facts to science. But I remember him chiefly as one of those instructors whose natural eloquence made it delightful to listen to him. I doubt if I or my fellow-students did full justice either to him or the famous physician of Hôtel Dieu, Chomel. We had addicted ourselves almost too closely to the words of another mas-

ter, by whom we were ready to swear as against all teachers that ever were or ever would be.

This object of our reverence, I might almost say idolatry, was one whose name is well known to most of the young men before me, even to those who may know comparatively little of his works and teachings. Pierre Charles Alexandre Louis, at the age of 47, as I recall him, was a tall, rather spare, dignified personage, of serene and grave aspect, but with a pleasant smile and kindly voice for the student with whom he came into personal relations. If I summed up the lessons of Louis in two expressions, they would be these: I do not hold him answerable for the words, but I will condense them after my own fashion in French, and then give them to you, expanded somewhat, in English:

Formez toujours des idées nettes.

Fuyez toujours les à peu près.

Always make sure that you form a distinct and clear idea of the matter you are considering.

Always avoid vague approximations where exact estimates are possible; *about so many,—about so much*, instead of the precise number and quantity.

Now, if there is anything on which the biological sciences have prided themselves in these latter years it is the substitution of quantitative for qualitative formulae. The "numerical system," of which Louis was the great advocate, if not the absolute originator, was an attempt to substitute series of carefully recorded facts, rigidly counted and closely compared, for those never-ending records of vague, unverifiable conclusions with which the classics of the healing art were overloaded. The history of practical medicine had been like the story of Danaides. "Experience" had been, from time immemorial, pouring its flowing treasures into buckets full of holes. At the existing rate of supply and leakage they would lead to results which would be trustworthy, and belong to science.

You young men who are following the hospitals hardly know how much you are indebted to Louis. I say nothing of his Researches on Phthisis or his great work on Typhoid Fever. But I consider his modest and brief Essay on Bleeding in Some Inflammatory Diseases, based on cases carefully observed and numerically analyzed, one of the most important written contributions to practical medicine.

to the treatment of internal disease, of this century, if not since the days of Sydenham. The lancet was the magician's wand of the dark ages of medicine. The old physicians not only believed in its general efficacy as a wonder worker in disease, but they believed that each malady could be successfully attacked from some special part of the body,—the strategic point which commanded the seat of morbid affection. On a figure given in the curious old work of John de Ketan, no less than thirty-eight separate places are marked as the proper ones to bleed in, in different diseases. Even Louis, who had not wholly given up venesection, used now and then to order that a patient suffering from headache should be bled in the foot, in preference to any other part.

But what Louis did was this: he showed by a strict analysis of numerous cases that bleeding did not strangle,—jugulate was the word then used,—acute disease, more especially pneumonia. This was not a reform, it was a revolution. It was followed up in this country by the remarkable discourse of Dr. Jacob Bigelow upon "Self-Limited Diseases," which has, I believe, done more than any other work or essay in our own language to rescue the practice of medicine from the slavery to the drugging system which was a part of the inheritance of the profession.

Yes, I say, as I look back on the long hours of the many days I spent in the wards and in the autopsy room of La Pitié, where Louis was one of the attending physicians,—yes, Louis did a great work for practical medicine. Modest in the presence of nature, fearless in the face of authority, unwearying in the pursuit of truth, he was a man whom any student might be happy and proud to claim as his teacher and his friend. And yet, as I look back on the days when I followed his teachings, I feel that I gave myself up too exclusively to his methods of thought and study.

There is one part of their business that certain medical practitioners are too apt to forget; namely, that what they should most of all try to do is to ward off disease, to alleviate suffering, to preserve life, or at least to prolong it if possible. It is not of the slightest interest to the patient to know whether three or three and a quarter cubic inches of the lung are hepatized. His mind is not occupied with thinking of the curious problems which are solved by his own autopsy,—whether this or that strand of the spinal marrow is the seat of

this or that form of degeneration. He wants something to relieve his pain, to mitigate the anguish of dyspnea, to bring back motion and sensibility to the dead limb, to still the tortures of neuralgia. What is it to him that you can localize and name by some uncouth term the disease which you could not prevent and which you cannot cure? An old woman who knows how to make a poultice and how to put it on, and does it *tuto, cito, jucunde*, just when and where it is wanted, is better—a thousand times better in many cases—than a staring pathologist, who explores, and thumps, and doubts, and guesses, and tells the patient he will be better tomorrow, and so goes home to tumble his books over and make out a diagnosis.

But in these days I, like most of my fellow students, was thinking much more of "science" than of practical medicine, and I believe if we had not clung so closely to the skirts of Louis and had followed some of the courses of men like Trousseau,—theraputists, who gave special attention to curative methods, and not chiefly to diagnosis, it would have been better for me and others. One thing, at any rate, we did learn in the wards of Louis. We learned that a very large proportion of diseases get well of themselves, without any special medication,—the great fact formulated, enforced and popularized by Dr. Jacob Bigelow in the discourse referred to. We unlearned the habit of drugging for its own sake. This detestable practice, which I was almost proscribed for condemning somewhat too epigrammatically a little more than twenty years ago, came to us, I suspect, in a considerable measure from the English "general practitioners," a sort of prescribing apothecaries. You know how, when the city was besieged, each artisan who was called upon in council to suggest the best means of defence, recommended the articles he dealt in: the carpenter, wood; the blacksmith, iron; the mason, brick; until it came to be a puzzle to know which to adopt.

"Then the shoemaker said, 'Hang your walls with new boots,' and gave good reasons why these should be the best of all possible defences. Now the "general practitioner" charged, as I understand, for his medicine, and in that way got paid for his visit. Wherever this is the practice, medicine is sure to become a trade, and the people learn to expect drugging, and to consider it necessary, because drugs are so universally given to the patients of the man who gets his living by them.

It was something to have unlearned the pernicious habit of constantly giving poisons to a patient, as if they were good in themselves, of drawing off the blood which he would want in his struggle with disease, of making him sore and wretched with needless blisters, of turning his stomach with unnecessary nauseous draughts and mixtures,—only because he was sick and something must be done. But there were positive as well as negative facts to be learned, and some of us, I fear, come home rich in the negatives of the expectant practice, poor in the resources which many a plain country practitioner had ready in abundance for the relief and the cure of disease. No one instructor can be expected to do all for a student which he requires. Louis taught us who followed him the love of truth, the habit of passionless listening to the teachings of nature, the most careful and searching methods of observation, and the sure means of getting at the results to be obtained from them in the constant employment of accurate tabulation. He was not a showy, or eloquent, or, I should say, a very generally popular man, though the favorite, almost the idol, of many students, especially Genevese and Bostonians. But he was a man of lofty and admirable scientific character, and his work will endure in its influences long after his name is lost sight of save to the faded eyes of the student of medical literature.

Many other names of men more or less famous in their day, and who were teaching while I was in Paris, come up before me. They are but empty sounds for the most part in the ears of the men of not more than middle age. Who of you knows anything of Richerand, author of a very popular work on physiology, commonly put into the student's hand when I first began to ask for medical textbooks? I heard him lecture once, and have had his image with me ever since as that of an old, worn-out man,—a venerable but dilapidated relic of an effete antiquity. To verify this impression I have just looked up the dates of his birth and death, and find that he was eighteen years younger than the speaker who is now addressing you. There is a terrible parallax between the period before thirty and that after threescore and ten, as two men of those ages look, one with naked eyes, one through his spectacles, at the man of fifty and thereabout. Magendie, I doubt not you have all heard of. I attended but one of his lectures. I question if one here,—unless some

contemporary of my own has strayed into the amphitheatre,—knows anything about Marjolin. I remember two things about his lecture on surgery,—the deep tones of his voice as he referred to his oracle,—the earlier writer, Jean Louis Petit,—and his formidable snuff box. What he taught me lies far down, I doubt not, among the roots of my knowledge, but it does not flower out in any noticeable blossoms, or offer me very obvious fruits. Where now is the fame of Bouillaud, professor and deputy, the Sargrado of his time? Where is the renown of Piorry, percussionist and poet, expert alike in the resonances of the thoracic cavity and those of the rhyming vocabulary? I think life has not yet done with the vivacious Ricord, whom I remember calling the Voltaire of pelvic literature,—a skeptic as to the morality of the race in general, who would have submitted Diana to treatment with his mineral specifics, and ordered a course of blue pills for the vestal virgins.

Ricord was born at the beginning of the century and Piorry some years earlier. Cruveilhier, who died in 1874, is still remembered by his great work on pathological anatomy: his work on descriptive anatomy has some things which I look in vain for elsewhere. But where is Civiale,—where are Orfila, Gendrin, Rostan, Bielt, Alibert,—jolly old Baron Alibert, whom I remember so well in his broad-brimmed hat, worn a little jauntily on one side, calling out to the students in the courtyard of the Hospital St. Louis, "*Enfants de la méthode naturelle, êtes vous tous ici?*" "Children of the natural method (his own method of classification of skin diseases), are you all here?" All here, then, perhaps; all where, now?

My show of ghosts is over. It is always the same story that old men tell to younger ones, some few of whom will in their turn repeat the tale, only with altered names, to their children's children.

Like phantoms painted on the magic slide,
Forth from the darkness of the past we glide,
As living shadows for a moment seen
In airy pageant on the eternal screen,
Traced by a ray from one unchanging flame,
Thence seek the dust and stillness whence we came.

Dr. Benjamin Waterhouse, whom I well remember, came back from Leyden, where he had written his Latin graduating thesis, talking of

the learned Gaubius and the late illustrious Boerhaave and other dead Dutchmen of whom you know as much, most of you, as you do of Noah's apothecary and the family physician of Methusaleh, whose prescriptions seem to have been lost to posterity. Dr. Lloyd came back to Boston full of the teachings of Cheselden and Sharpe, William Hunter, Smellie, and Warner; Dr. James Jackson loved to tell of Mr. Cline and to talk of Mr. John Hunter; Dr. Reynolds would give you his recollections of Sir Astley Cooper and Mr. Abernethy; I have named the famous Frenchmen of my student days; Leyden, Edinburgh, London, Paris were each in turn the Mecca of medical students, just as at the present day Vienna and Berlin are the centres where our young men crowd for instruction. These also must sooner or later yield their precedence and pass the torch they hold to other hands. Where shall it next flame at the head of the long procession? Shall it find its old place on the shores of the Gulf of Salerno, or shall it mingle its rays with the northern aurora up among the fjords of Norway,—or shall it be borne across the Atlantic and reach the banks of the Charles, where Agassiz and Wyman have taught, where Hagen still teaches, glowing like his own *Lampyrus splendidula*, with enthusiasm, where the first of American botanists and the ablest of American surgeons are still counted in the roll of honor of our great University?

Let us add a few words which shall not be other than cheerful, as I bid farewell to this edifice which I have known so long. I am grateful to the roof which has sheltered me, to the floors which have sustained me, though I have thought it safest always to abstain from anything like eloquence, lest a burst of too emphatic applause might land my class and myself in the cellar of the collapsing structure, and bury us in the fate of Korea, Dathan, and Abiram. I have helped to wear these stairs into hollows,—stairs which I trod when they were smooth and level, fresh from the plane. There are just thirty-two of them, as there were five and thirty years ago, but they are steeper and harder to climb, it seems to me, than they were then. I remember that in the early youth of this building, the late Dr. John K. Mitchell, father of our famous Dr. Weir Mitchell, said to me as we came out of the Demonstrator's room, that some day or other a whole class would go heels over head down this graded precipice, like

the herd told of in Scripture story. This has never happened as yet; I trust it never will. I have never been proud of the apartment beneath the seats, in which my preparations for lecture were made. But I chose it because I could have it to myself, and I resign it, with a wish that it were more worthy of regret, into the hands of my successor, with my parting benediction. Within its twilight precincts I have often prayed for light, like Ajax, for the daylight found scanty entrance, and the gas-light never illuminated its dark recesses. May it prove to him who comes after me like the cave of Sibyl, out of the gloomy depths of which came the oracles which shone with the rays of truth and wisdom!

This temple of learning is not surrounded by the mansions of the great and the wealthy. No stately avenues lead up to its façades and porticos. I have sometimes felt, when conveying a distinguished stranger through its precincts to its door, that he might question whether star-eyed Science had not missed her way when she found herself in this not too attractive locality. I cannot regret that we—you, I should say,—are soon to migrate to a more favored region and carry on your work as teachers and as learners in ampler halls and under far more favorable conditions.

I hope that I may have the privilege of meeting you there, possibly may be allowed to add my words of welcome to those of my former colleagues, and in that pleasing anticipation I bid good-by to this scene of my long labors, and, for the present at least, to the friends with whom I have been associated.

Original Articles.

NATURAL AND ARTIFICIAL CO₂ WATERS IN CARDIAC DISEASES.

By SIMON BARUCH, M.D., NEW YORK.

Hydrotherapeutist to Sea View Hospital for Tuberculosis; Consulting Hydrotherapeutist to Bellevue Hospital; Formerly Professor of Hydrotherapy, College of Physicians and Surgeons, Columbia University, New York.

THE reputation of the Nauheim Springs in the management of heart disease has been established for many years by the fact that physicians from all countries, especially the English, have

before the war habitually sent their patients to these springs. Indeed, so favorable have been the results that several artificial preparations for the production of CO_2 have attained more or less vogue in the treatment of cardiac diseases at home.

HISTORICAL.

My interest in this subject was aroused during a visit to Nauheim in 1895, to study the physiological action and therapeutics of its waters. In 1908 and 1913 I again visited this spa.

In 1895 I brought to this country and gave to Mr. Cassebeer, a professor in our School of Pharmacy, the Sandow Tablets for artificial CO_2 baths of which the Cassebeer and Triton preparations are reproductions.

In 1908 the Zeo Baths, which were highly recommended to me by Prof. Laqueur in the Virchow Hospital, were experimented with in the Vanderbilt Clinic.

That there exist Natural CO_2 waters in this country, available for baths, had not been broached until my discovery in 1913 that there was no natural CO_2 bath obtainable in the State Bathhouse at Saratoga Springs. On my urgent initiative the decadent springs were brought up to their present efficiency (Report of Saratoga Reservation Commission, 1914) after my personal study of the principal European spas, made by request of the State authorities.

Dr. Joseph H. Pratt has well said (Transactions of the American Climatological Ass'n, 1914) "Of the physiological action of the carbon dioxide baths little is definitely known. . . . The literature abounds in impressions and speculations. . . . There is not even an agreement whether the baths increase or diminish the work of the heart."

It has been my aim to find the reason for this difference and to obtain a rational explanation of the action of the Nauheim waters in cardiac diseases. On investigating the writings of various authors I found, almost invariably, the physicians using the natural Nauheim waters, agreeing with Groedel's most recent statement, "We have it in our power to put into action by gradual approach, the excitations which drive the heart to greater activity;" while those who experimented with artificial CO_2 baths, agree with Bezly Thorne that "the tension of the pulse is reduced, as a general rule."

I propose to explain this difference and to

offer a correct rationale of the action of the Nauheim waters.

My investigations on this subject in Nauheim and at Saratoga Springs with *natural* CO_2 baths, and in the Montefiore Home and in Saratoga with *artificial* CO_2 baths, convince me that the *local action of the CO_2 is secondary*. The latter has, by some, been erroneously regarded as the most active element in the Nauheim Baths. This is probably due to their not having accurately imitated the Nauheim waters in their observations. The latter differ from all other CO_2 waters in the fact that *they contain a large proportion (about one pound to five gallons) of sodium chloride*, and one pound of calcium chloride. I regard the latter as inert.

I am convinced that the chief element in the therapeutic action of the Nauheim bath is ascribable to the *absorption* of CO_2 from the bath which results:

1. In the stimulation of the respiratory centers by the circulating CO_2 in the blood;
2. By its stimulation of the smooth muscular fibres of the vascular system and the heart;
3. The constricting action of the absorbed CO_2 upon the involuntary muscular fibres of the skin.

ABSORPTION OF CO_2 .

That gases may be absorbed through the skin has long been known. Upon this point there appears to be no disagreement. Ottfried Miller and his aids mention it but do not appear to realize its importance. (*Sammlung Klinischer Vorträge*, No. 711-14, 1915.)

Experiments in the Erlangen Clinic by Dr. Winternitz (not the Vienna hydrotherapeutist) have demonstrated: (a) that CO_2 is absorbed slowly in a bath containing 1% sodium sulphate and carbonate; (b) absorption is more rapid and complete in a 2-3% sodium chloride bath.

It was ascertained that in such a bath there occurs a decided increase of the respiratory amplitude and that this is a specific action of the CO_2 baths which is absent in the case of other skin irritating baths, even when they increased oxidation, as in mustard baths. The cause of this enhancement of the respiration is found in the excitation of the respiratory center by the absorbed CO_2 .

That the frequency was diminished and the inspiration deepened had been previously observed by others.

Experiments made, under my direction, by

the official chemist of Saratoga Springs, demonstrate other advantages of the chloride of sodium addition to the artificial CO_2 bath; viz., "it seems to make the water retain the gas better and therefore improve its supersaturation; there is far less loss of CO_2 , only 1 to 2% of gas during a ten minute bath."

1. That CO_2 circulating in the blood in excess stimulates the respiratory center is a well-known physiological fact; an increase of 2% causing a tenfold energy of respiratory activity in health (Burton-Opitz). Starling (*Lancet*, 1915) gives CO_2 the first place as the hormone or chemical regulator of respiration. Therapeutically this enhancement of respiratory activity becomes of immense import, in that it must influence favorably the entire intrathoracic circulation, more especially the venous flow. The right heart is unloaded and the diastole prolonged, all of which must bring great relief from stases, which, by their production of edemas and causing retention of toxins from faulty tissue change, give the bedside clinician most anxiety and but too often close the scene. I am disposed to regard this action of the absorbed CO_2 as most important in temporarily restoring lost cardiac equilibrium. That judicious adaptation of the bath to each individual case is required is evident. It is remarkable that clinicians do not lay more stress upon this demonstrated action of CO_2 .

Commenting upon my rationale of the Nauheim bath, Professor Groedel protests that there is already a dangerous increase of CO_2 in many cardiac cases. This has not been proven. On the contrary, there is high authority for the view that the cyanosis present in extreme cardiac failure is due to the absence of oxygen.

2. In the saline medium CO_2 enters the blood by rapid absorption. Here the chief action of this water is direct stimulation of the unstriated muscular fibres of the arterioles, arteries, and heart, improving the blood flow and preventing stases, which are the lethal factors in cardiac diseases.

The extent to which CO_2 baths increase blood pressure, pulse frequency, volume and tension, has been a bone of contention among investigators. Ottfried Miller and other laboratory reporters find little or no increase of blood pressure, while Groedel, Jacob, and others, who practice with natural CO_2 baths, report an increase. Most of them find bettered tone of vessels and

improved cardiac conditions. My own observation, made with natural Saratoga waters, confirms the latter view.

The difference, in the observations of equally reliable clinicians, may be explained as follows: The action of water, air, and CO_2 gas upon the skin is determined by the temperature conducting capacity of these agents. Air and CO_2 gas differ materially in capacity of absorbing temperatures (cold and heat) and water absorbs temperature with far greater rapidity than either. The point at which the skin is indifferent to water, air or CO_2 , as ascertained by changes of blood pressure, is 34 to 35 C. (93 to 95 F.) for plain water, and it is lower for atmospheric air, in ordinary humidity, 20 to 25 C. (68 to 77 F.) and for CO_2 gas it is still lower, viz.: 13.5 to 14 C. (57 F.). According to Senator and Frankenheimer (*Therapie de Gegenwart*, 1904) air, water and CO_2 gas differ still more positively in conductivity or capacity for transmitting temperature to objects. Taking the conductivity of air to be 100, that of CO_2 gas is inferior (almost one-half) to that of air, and almost infinitesimal when compared to water (1 to 54). Therefore, CO_2 conducts its own temperature, so slowly to the skin that it must be warmed by the temperature of the water long before the skin can be affected by it. The water temperature always dominates, because of its great temperature conductivity, both in the low and high temperature baths. This confirms the results of my clinical observation. ("Principles and Practice of Hydrotherapy," Wm. Wood & Co., Third Edition, p. 51.)

A very potent influence upon the circulation has been overlooked by all observers, viz.: the direct stimulation of the heart muscle by absorbed CO_2 . We have experimental warrant for such cardiac stimulation in the fact that animals poisoned by CO_2 die with the heart in systolic contraction.

The hyperaemia of the skin is not due to vasomotor action, because it is discovered only in parts that are exposed to the CO_2 bath.

The main vasomotor action ensues when, as I have shown ("Principles and Practice of Hydrotherapy," Wm. Wood & Co., 1908, p. 50), the bath temperature is reduced below the neutral temperature (which is about 34 C. or 93.2 F.) for CO_2 water. The lowest temperature prescribed by Groedel and others, being 30 C. (86 F.) must produce some reflex vasomotor effect by excitation of the peripheral nerve endings.

which fulfills my hydrotherapeutic law, viz.: the degree of difference between the water temperature and skin temperature governs the intensity of the peripheral excitation, and therefore of the reflex vasomotor action. A carbonic acid bath of 94 F. (neutral) would be indifferent to the skin, while a CO₂ bath of two to seven degrees lower, which is not uncommon in Nauheim, must produce thermic nerve excitation.

Groedel holds that "It is unnecessary to assume a direct effect from absorbed CO₂ gas upon the involuntary muscle fibres in order that there should be an irritant action. The mechanical irritation of the gas bubbles upon the peripheral nerve endings would suffice for this purpose; secondly, it is questionable whether or not we have here a thermic excitation through cold, in a bath of 32 C., to which I should reply that a difference of 2° C. between the bath water and the skin is certain to arouse a thermic excitation in the sensory terminals of the latter and produce reflex vasomotor action; and replying to the first, there is no such "mechanical irritation from bubbles" in the oxygen (Ozet) bath, in which reddening of the skin is absent.

Third, experiments made by myself in Bad Nauheim and in Saratoga Springs, have convinced me that a CO₂ bath produces on the unstriated muscular structures of the skin a constricting action similar to, but milder than, that produced by plain cold water.

Guided by the susceptibility of the dartos of the scrotum to cold as manifested by its ready contraction in cool air, I utilized this peculiarity of the scrotum for the purpose of ascertaining the effect of the CO₂ waters of these springs. There was noted an unmistakable formation of rugae in the scrotum of a man emerging from the Sprudel No. 12 Bad Nauheim (*N. Y. State Journal of Medicine*, June, 1916) while a plain water bath of the same temperature (93 F.) produced no effect. This constricting of the skin probably offers a mild but positive resistance to the flow of blood in the large peripheral surface, with the result of enhancing cardiac energy.

There is no reason to doubt that the same constricting effect is produced upon the less susceptible unstriated muscular fibres in the cutaneous surface of the entire body, though not so perceptible to the eye. It is not unreasonable to assume that this inuscular contraction furnishes added resistance at the periphery,

which promotes reaction, despite capillary dilatation.

HYPERAEMIA OF THE SKIN.

This accumulation of blood in the extensive cutaneous area withdraws a large quantity from the interior circulation and to that very considerable extent diminishes the labor of the heart, by reason of the *vis a fronte*. This is the chief advantage of the hyperaemia induced by the action of CO₂. It may lighten the burden of an insufficient heart. Other cutaneous irritants may accomplish the same object but they have the disadvantage, e.g., mustard baths, of irritating the skin for a more or less definite period succeeding the bath: while hyperaemia from CO₂ bubbles disappears quickly after the termination of the bath. It is obvious that this irritation would handicap the heart if it persisted. Happily it is accompanied by the above mentioned phenomena which the author regards as paramount in the CO₂ bath.

SUMMARY.

It is plain that through the combined effect of all the elements furnished by the absorbed CO₂ baths, as described above, together with a mild vasomotor stimulation and a positive but moderate resistance at the periphery, the ventricle, already stimulated by absorbed CO₂, is made to propel the blood with more energy to all the outlying districts. This mild training of the heart appears to be productive of salutary conditions in the entire vascular system, for which the Nauheim waters have justly become famous.

COMPARISON OF THE NATURAL AND ARTIFICIAL CO₂ BATH:

The fact that CO₂ is regarded as the chief element in the Nauheim bath administered for cardiac diseases has led to the erroneous idea that the salines may be safely omitted, and more erroneous still, that the stronger CO₂ content the more efficient is the bath. The fallacy of this view is proved beyond doubt by the consensus of medical men who have made Nauheim the Mecca for sufferers from this disease, while other CO₂ springs like Kissingen, Brunnau, and Homburg, which contain from 15 to 25% more CO₂ supersaturation than the Nauheim water, are rarely prescribed for this purpose. *The chief difference between the Nauheim*

waters and those of the other springs mentioned is the large sodium chloride content of the first. The value of the chloride of sodium in the furthering of absorption of CO_2 has been proved.

Regarding this as a control therapeutic test, unequaled in the history of medicine, I suggested to the superintendent of the fine CO_2 springs in Saratoga, that the Nauheim waters may be successfully reproduced by the addition of sodium chloride and calcium chloride, in sufficient quantity to approximate its saline content to that of the Nauheim Springs. It is gratifying to state that this official has arranged to have on hand properly weighed packages of these salines for the purpose of filling prescriptions for Nauheim baths without delay. These salines are dissolved in a bucket of water and poured into the tub *before* the CO_2 water enters it; the latter is heated in a movable steam coil to the temperature prescribed, so that physicians may follow the plan pursued in Nauheim in having their prescriptions filled at the temperature and percentage of gas and salines desired, with the utmost precision. In the artificial CO_2 bath, on the contrary, the percentage is not definite because it depends upon the size of the tub, which is rarely measured.

The duration of the Nauheim bath is from 6 to 15 minutes. It is therefore necessary that absorption of gas must be rapid. Here the superiority of the natural over the artificial CO_2 bath is again in evidence. The natural CO_2 water presents very fine bubbles and contains more dissolved CO_2 because it has been in age-long contact under pressure with the water in which it is dissolved. It does not escape as quickly from the bath as does the CO_2 from an artificial bath made with chemicals which is not under pressure. Indeed, the difference is very great. Baerwald and VonHeyde (Balneological Congress, 1909) have ascertained that the air immediately in contact with an artificial CO_2 bath contains 17.25% of CO_2 , while the air above the natural CO_2 bath contains only 0.89%. Moreover, experiments made under my direction by the State chemist at Saratoga Springs, show that the total gas available from a CO_2 bath prepared with hydrochloric acid, 12 oz., and bicarbonate of soda, 8 oz., in 75 gallons of water is less than 11%, of which only $\frac{42}{100}\%$ is supersaturation; while the Hawthorne Spring No. 1, which is used in Saratoga for baths, retains practically the same gas content as the average Nauheim

bath, while the patient is taking the bath, and stirring the water.

For this reason I prefer the Hawthorn No. 1 for Nauheim baths (*i.e.* with salines). The stronger CO_2 water of the Lincoln Springs is better adapted for neuroses and rheumatic conditions, obesity, etc.

It is advisable for physicians sending heart cases to colleagues in Saratoga to state that *Nauheim baths are desired*, in order to insure the saline content.

ARTIFICIAL NAUHEIM BATHS.

Since the CO_2 generated from chemicals cannot be incorporated thoroughly with the bath water owing to absence of pressure, it escapes readily, as has been demonstrated by experiments. For this reason it is more important to add the salines dissolved in a bucket of water (one pound of sodium chloride to five gallons of water) into the tub before the chemicals are added. *The quantity of water should always be measured.*

In view of the above briefly stated chemical and physiological data, the natural CO_2 bath is certainly superior in cardiac diseases to the artificially produced.

In a recent correspondence with Sir William Osler on the subject of utilizing the waters of Spa in Belgium and St. Moritz in Switzerland, as is done in Saratoga, he writes, "No doubt the natural baths are much to be preferred. . . . I wonder could the Spa people not be stirred up a bit to do what Nauheim used to do so well."

Adding the improved hygienic environment of the patient at the springs the superiority of the natural CO_2 bath with salt becomes self-evident.

PNEUMONIA AND EMPYEMA.

BY 1ST LIEUT. HORACE GRAY, MEDICAL CORPS,
U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens,
Mass.]

(Continued from page 354.)

23. *Digitalis*. This drug in the form of the tincture as obtained from various commercial houses, has been regularly found adequate to reduce the pulse, even during the fever, as Cohn has shown, to 80, 70 or 60. One cc. has been given by mouth 4 i.d., beginning on admission to the pneumonia ward, and this routine has

been continued day after day until the pulse has fallen to 80. Several ounces have often been used. No ill effects have been noted, and nausea has been the exception.

24. *Serum Treatment.* The usual procedure has been:

a. Intradermal test soon after admission to pneumonia ward.

b. If no reaction in one-half hour, 0.5 cc. serum as s.c. desensitizing dose.

c. If type I was later reported and if patient was at all restless, morphin sulphate 0.008 was given s.c.

d. Type I serum 100 cc. was mixed with 100 cc. hot sterile saline.

e. Injection was by gravity through 18G needle into median vein at the rate of 15 cc. during the first 15 minutes.

f. If no ill effect, remainder was let run in in 10-15 minutes more. No ill effects have yet been encountered requiring intermission for $\frac{3}{4}$ hour, as has been recommended for such patients.

The first injection was given on the 6th day of the disease, on the average. Unfortunately, none was given until the 3rd day, while one was not given until the 9th, and another as late as the 15th day. These last two both died.

The "6th day" above does not indicate as much tardiness on our part as it suggests at first, for from the point of the time in hospital before the first injection, the average was the 4th day in hospital, the earliest case having been treated on the day of admission and the latest on the 13th day in hospital. This leaves out of consideration the cases untreated because typed only from the heart blood post mortem.

The number of injections averaged 3, and went as high as 11. Of the four fatal cases, two had no injections (because typed only post-mortem), one had 5, and one 11.

The total amount of serum averaged 293 cc., varying from 40-1060 cc. The two largest figures were, in the two fatal treated cases, 875 and 1060 cc.

The reaction to serum was marked in four cases, moderate in four, slight in six, and absent in ten. The clinical notes are too brief to make clear whether these reactions were really anaphylactic or only thermal; but in at least two cases they appear to have been of the former type, although the previous intradermal test was negative in all of these fourteen patients who showed reactions. This surprising combi-

nation of events has been stated as in fact occurring, though rarely. (Walker, I. C., *Jour. Med. Res.*, 1916-17, xxxv, 497.)

The crisis occurred on the day after treatment in six cases, on the second day after treatment in five cases, third in two, fourth in two (one of whom died), fifth, four; sixth, two; fifteenth, in one; eighteenth, in one; and nineteenth, in one (who died). The average was the fifth day, but on account of the three cases with late falls of temperatures, by lysis rather than crisis, a fairer criterion might be the mean, which was the 3rd day. Even then, this series does not afford very strong evidence of the value of the type I serum supplied us.

The results were significant only for the delays, associated with the infrequency of type I's and the difficulty in securing what was at first considered sputum satisfactory for typing. There were 38 type I's, 12 of whom had begun to improve, and two died (one of septicemia and purulent peritonitis; the other of purulent pericarditis) before they were successfully typed. Of the remaining 24 patients treated, only one had two doses, the others only one. Serum was administered only on the third day of the disease in four cases; fourth, in five; fifth, in four; sixth, in three; seventh, in one; eighth, in four; ninth, in two (of whom one died, with pus in all three serous cavities of the chest); and fifteenth day in one patient (who died, also with pus in the three chest cavities). The mortality, then, of the 24 typed and treated I's was 8%. This satisfactory figure would appear offhand to be strong evidence of the value of our serum. We must recollect, however, that the type I organism seemed here not especially severe; our 38 type I's had less than 11% mortality. If we now discard the four fatal cases on the ground that they were so severe as to have been probably irredeemable by any amount of serum, we have left 34 cases: 22 treated and 12 untreated. As neither of these groups had a death and further, as the groups are relatively small, we might feel that our statistics could hardly be adduced in support of the faith that is in us with reference to Cole's teaching of the desirability of pushing specific serum to the utmost.

The intradermal test has been done as a routine in a great majority of the cases, on admission to the pneumonia ward. It was positive in only one. This did not happen to be a type I, but a measles-lobar-pneumonia with

27. *Pericarditis* occurred:

a. Infrequently, *i.e.*, in only 3% of 485 pneumonias.

b. Out of these 14 cases, 11 times with pus to 3 times without.

c. More often, contrary to expectation with right-sided pneumonia: Right, 1; left, 1; with bilateral pneumonia 5 times.

d. With empyema pleurae 11 times, to 3 times without.

e. With 50 to 400 cc. of pus, the average of the 11 being 174 cc.

28. *Otitis Media* was present in 3% of the 485 cases. It resulted in several mastoid operations, but was not followed in any case by septic meningitis, as reported by Alexander. (Hemolytic *Streptococcus* at Camp Zachary Taylor, *Jour. A.M.A.*, March 16, 1918, 70, p. 775).

(To be continued.)

American Medical Biographies.

LOUIS HÉBERT (-1627).*

EVERY student of Canadian history knows that from the first days of the colonization of New France an important rôle as colonists was played by members of the medical profession. If they were not remarkable for any great professional brilliancy, they were generally men of sterling character and courage.

Louis Hébert, apothecary, surgeon, and agriculturist, is regarded, next to Champlain, as the "Father of New France." When Champlain induced his old friend of Port Royal to venture once more to become a colonist of New France, he knew he had accomplished a greater work in building up his colony than had been done since its foundation. For Louis Hébert had proved his worth at Port Royal, not only as a surgeon, but as a keen and ardent agriculturist.

When Champlain returned to France in 1617, his mind filled with the wondrous future he was planning for Quebec, he knew it was of vital import to obtain as colonists men of the best type, not jail-birds such as Roberval had had to contend with, not mere adventurers, who came for love of adventure or gain and went away again, but men who would cultivate the land. And so the thought of his friend came to him—Louis

Hébert, who had cultivated such beautiful gardens at Port Royal, until that settlement was destroyed by Samuel Argall, when Hébert returned to France. Louis Hébert had received a good education, for his father was a man of repute, being apothecary to Catherine de Médicis. Louis followed his father's business and had a shop on the banks of the Seine, where he was well patronized, but in the summer of 1606, he suddenly announced to his friends and relatives that he was sailing with Poutrincourt and fifty other colonists for the New World, of which there had lately been so much talk. Among others who sailed in the ship was the Parisian lawyer, historian and poet named Lescarbot, the friend and lawyer of Poutrincourt. It is to Lescarbot that we are indebted for the vivid portrayal of how the first winter in the new settlement at Port Royal was passed. "For my part," writes Lescarbot, "I can say that I never worked so hard in my life. I took pleasure in laying out and cultivating my gardens, in making alleys, in building summer-houses, growing wheat, rye, barley, oats, beans, peas, and garden plants, and in watering them, for I was most anxious to find out, by personal experience, the quality of the soil."

With Lescarbot worked Hébert, and the days were not long enough for these two enthusiastic agriculturists; they must needs work by moonlight, digging and planting. Lescarbot and Hébert returned to Paris in the autumn of 1607, but Hébert, after a short stay, came back to Port Royal, accompanied by Biencourt, Poutrincourt's son. He assisted Biencourt in managing and taking care of those colonists who had remained, and when Biencourt was absent acted as lieutenant, until the place was destroyed in 1613, by the English. Hébert then returned to Paris, as he thought, for good, and once more opened his shop on the banks of the Seine.

When Champlain arrived in France, in 1617, he visited Hébert and so beguiled him with his marvellous accounts of the country about Quebec that Hébert again sold his possessions and with his family started for Honfleur, where he arrived on March 14. Champlain had induced a new fur trading company to promise to support Hébert and his family for two years, and afterwards to make him an allowance of two hundred crowns for three years.

On arriving at Honfleur, Hébert found, to his chagrin and dismay, that all the promises which the company had held out to him were false.

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

In vain did Hébert appeal for fair treatment. The company refused to keep their promises; they offered him one hundred crowns, instead of two hundred, and, moreover, required his bond for free medical attendance at all times to the settlers and to the clerks belonging to their company. Hébert was at their mercy, but rather than return to Paris, for he had disposed of all his effects, he embarked with his family for the New World.

Their passage was a stormy one, and when they reached Newfoundland the ship encountered a great field of icebergs. At one time it seemed as if all on board must perish. Father Joseph, one of the passengers, knelt upon the deck and prayed for Divine assistance, and we are told, in the "Relations of the Jesuits," that Madame Hébert took Marie Rollet, her youngest child, and held her up through the hatchway, that she might receive the father's blessing. It was on this long and stormy voyage of thirteen weeks and a day that the courtship of Anne, the eldest daughter of Hébert, commenced. Among the passengers was one Etienne Jonquest, a sturdy son of Normandy. He wooed Anne so successfully that the two were married in the autumn by Father le Caron. This was the first marriage in Canada, according to church rites, but Anne had a short wedded life, for she died in 1619 and was followed by her husband within a few weeks.

Louis Hébert chose for the site of his future home in Quebec, land on the height above—later called Mountain Hill, part of which was between the present streets of Famille and Conillard. He lost no time in building his home, a substantial stone house, 38 feet in length by 19 in width, the best house, for many years to come, in Quebec, and the first dwelling in what was afterwards the upper town, for as yet Champlain had not built his fort on the cliff. Not far from the house ran a stream of pure water, and this had decided Hébert in his choice of a site. For ten years Hébert toiled like any hardy peasant upon his farm. He sowed Indian corn and vegetable seeds, planted apple trees and his beloved grape vines. All his spare time, when not attending to the sick, was devoted to his agricultural pursuits. Every year he cleared more ground and tried fresh experiments in farming; every year his farm became more and more productive. He was able, almost from the first, to support his family on what he raised, and this, in spite of the fact that the company forced him to sell

them his grain at a price fixed by themselves, one of the many acts of injustice rendered him by the company. The farm was the show farm of Quebec—the model farm, so to speak, of the day. From this time agriculture began to find its place in New France, and in these golden days of Canada's greatness, she may well be proud of her first farmer.

The life of this clever, original Frenchman was crowned with interest from the day he first left Paris and settled at Port Royal to his final home in Quebec. Through innumerable hardships and difficulties he had struggled on with unflinching courage and hope. He had accomplished wonders during his ten years' residence at Quebec. In January, 1627, a great sorrow came upon his friends. Hébert fell on the ice when he was crossing a river and died shortly afterwards from the effects of the fall. They buried him amidst great grief in the cemetery of the Recollet Fathers, at the foot of the cross. Only three days before the accident, Hébert had visited the Fathers and, as though he had a premonition of his death, he had requested that when the event took place, he should be buried in that spot.

M. CHARLTON

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Book Review.

War Surgery of the Abdomen. By CUTHBERT WALLACE, C.M.G., F.R.C.S., Eng., M.B., B.S., Lond., Surgeon, St. Thomas' Hospital; Lecturer on Surgery in the Medical School; Consulting Surgeon, British Armies in France. With 26 Illustrations. Philadelphia: P. Blakiston's Son & Co. 1918.

This is a book of 150 pages, admirably printed and illustrated, and is to be commended for careful study. Obviously so enormous a subject as War Surgery of the Abdomen must be very greatly condensed in order to be placed within the limit of 150 pages; nevertheless, such monographs as this are of the utmost value in arriving at ultimate conclusions. Wallace's pages bear witness to the fact that he is an admirable surgeon of wide experience and common sense, and possessed of the unusual ability to say much in a few words.

It is to be hoped that this little book, like previous volumes, will attain a wide popularity, which it greatly deserves.

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MEDICAL REFORM FOR IRELAND.

THE *Medical Press* in its February 12th edition contains a very pertinent article read by Thomas Hennessy, F.R.C.S.I., D.P.H., before a recent meeting of the Royal Academy of Medicine in Ireland. The title of Dr. Hennessy's subject is "Medical Reform for Ireland," and in this paper he has set forth some views on the medical situation in that country which are "unofficial and non-committal so far as the profession in Ireland is concerned." As a dispensary doctor for almost 20 years in the County Tipperary, under the Poor Law Service, Dr. Hennessy tells us that between 50 and 70 per cent. of the Irish population are at present receiving their medical treatment as "poor persons." But this is not, he says, the fault of the Irish people; rather does the responsibility rest on the legislators who manifest a shocking indifference toward the medical needs of the country. In view of the expectation that there will be before long a Ministry

of Health established in Ireland, Dr. Hennessy outlines a scheme of local organization whereby those entitled to treatment will be able to obtain it in a manner suited to their individual needs. There is in Ireland no system of public health, there is no health inspection in the schools, and the medical benefits of the National Health Insurance Act do not apply in Ireland. It is not because the country as a whole is healthier than other civilized countries that health legislation is so curtailed,—for example, the death rate from tuberculosis, which is declining in Great Britain, stands stationary in Ireland. The crying need for better medical service is voiced not alone by the medical profession, but by the entire population as well, and still nothing is done. Now, however, the time has come indeed for a period of universal reconstruction, and reformation of the medical situation in Ireland deserves immediate attention.

Local statistics have shown that the dispensary doctors attended and registered 610,322 new cases in a year. The number actually attended would be very nearly double the number of new cases, or 1,220,644. As remuneration for their services in attending these patients in 1917, the dispensary doctors received approximately £130 per year. Among these doctors are many men of advanced years whose meagre salary has never permitted them to save enough to retire and who must keep on practising for their livelihood. This is, of course, equally as bad for the public who must depend on the dispensary physician.

In 1910 a referendum of the Irish profession was taken, and considerably over 90% of the entire profession voted for a National Medical Service with entrance by competitive examination, and placed under the control of a Board containing a due proportion of medical men, elected by the service, with laymen chosen by the county councils. Because of the various areas into which Ireland is divided, a mixed system of public health is deemed most satisfactory. In the rural areas it is thought advisable to place one doctor in charge. This man, a successful candidate under competitive examination, would assume office under the County Health Commissioner and his duties would be to attend all insured persons and their dependents, the destitute poor, and possibly some others. For this he would receive

a minimum salary of £350 a year with increase until a maximum of £500 was attained, with permission to practise privately in his locality. Provision for his resignation, if necessary, and for his family on his death, if he satisfactorily performs his task, would be considered, and promotion on the basis of character while he is in office also provided for.

This is but one example of many possible changes in the present system of medicine in Ireland. In view of the fact that the salary of the dispensary doctor has changed but little in the past 50 years such arrangement would be a welcome one to the man who gives most of his time and his energy for charity. The fact that the popularity of the poor law system has perhaps contributed greatly to its abuses is evident, but from the economical point of view of the physician such a service is to him utterly inadequate for a livelihood. Dr. Hennessy has clearly pointed out that a nation cannot expect to maintain its life and health unless the interests of its medical profession are protected.

WORLD LEAGUE OF RED CROSS SOCIETIES.

THIRTY days after peace has been declared, there is to be held in Geneva, Switzerland, a conference of the Red Cross Societies of the world, to present a program for coördinating the efforts of all Red Cross organizations in the common interest of humanity. It is hoped that a league of Red Cross Societies may be formed which will strive not only to relieve human suffering wherever it may exist, but also to prevent it, and strengthen the spirit of brotherhood among all peoples. Officers and committees have been appointed to carry on the peace work of the organization, with Dr. Livingston Farrand now the permanent chief executive of the American Red Cross.

Representatives of Red Cross Societies of the United States, Great Britain, France, Italy, and Japan have held preliminary meetings at Cannes and Geneva, for the purpose of formulating a program of extended Red Cross activities. Their first efforts will be to cover the subjects of public health and sanitation, tuberculosis, nursing, child welfare, and malaria, and certain other infectious diseases. *The Red*

Cross News has summarized as follows the results which may be expected from this world-wide organization:

It would awaken the peoples in every country of the world to a sense of their obligations to their fellow men, and there would naturally follow in each country an awakening to the needs within that country and a determination to meet them as far as possible.

It would throw light on the darkest corners of the earth and would give to all the world the full benefit of scientific study and experience in the prevention and cure of disease.

It would make possible the immediate co-operation of the various organizations to render aid when necessary in the case of great disasters.

If it had been possible to effect this organization two years ago it is conceivable that there would be going today to the various countries now in distress, supplies and aid which would give comfort to and restore to health millions of people who cannot now be cared for. No one knows how many millions have died during the past years from influenza.

The losses of India in the war were about 100,000 and deaths from influenza in that country alone are estimated to be about 2,500,000.

The proposed extension of Red Cross activities will promote the welfare of humanity throughout the world; in the fulfillment of its plans, the Red Cross will need the sympathy and the support of the whole American people.

THE DRUG EVIL AND THE DRUG LAW.

THE Department of Health of New York City has issued recently a monograph entitled "The Drug Evil and the Drug Law," which presents an analytical review, for the information of the medical profession, the drug traffic, and the general public, of the provisions of the "Narcotic Drug Law" adopted in New York on May 13, 1918. In recent years, the "drug evil" has become more powerful as a public menace, and it has been estimated that from one to two per cent. of the population of the country are addicted to the use of drugs. Efforts have been made by the United States to secure the co-operation of other governments; to this end, an International Convention was held at the Hague in 1911-12. At the same time, various states began to recognize the extent to which the evil was spreading and began to be aroused

to opposition. By 1912, thirty states had taken some action against the danger by enacting anti-narcotic laws. The first decisive step taken in the State of New York was in 1913, when a law was passed to control the manufacture, sale, and distribution of cocaine.

Meantime, the Federal Government was not inactive, and passed the Harrison Law as a revenue measure, to go into effect on March 1, 1915. In 1916, various measures proposed to control the evil were incorporated in one bill, which failed to be passed. A committee was appointed, however, to investigate the subject and to suggest legislation which might be expected to cope with the problem. The committee discovered that the drug traffic continued to increase and conditions revealed a deplorable situation. The heroin habit, particularly, reached extremely large proportions in New York State. Ten per cent. of the cases dealt with in the Court of Special Sessions of New York County is made up of drug addicts, and it is probable that at least 100,000 people in the State of New York are suffering from drugs.

In 1917, the Whitney bill was passed, with noticeable results. The underworld traffic received substantial check, and treatment by physicians was encouraged. In 1918, another evil manifested itself: it was found that physicians prescribed drugs not for the purpose of alleviating suffering, but to keep the victim supplied with drugs and so reap dishonorable profit for themselves. This practice, reprehensible as it was, did not involve a large number of physicians, and was less vicious than general underworld peddling of narcotics. Greater interest began to be shown in the cure and treatment of drug addicts, with a consequent divergence of opinion. Two conclusions, however, which are drawn in this pamphlet, do not appear to conflict seriously: one, that there is no known specific remedy for the cure of a drug addiction; two, that the cocaine habit responds more readily to treatment than the narcotic habit. The value of sanatorium or institutional care as compared with attendance upon the general practitioner became a subject for contention, and some of the advantages and disadvantages of both systems are reviewed in this monograph.

Although the statutes of New York, including the "Narcotic Drug Law," passed in 1918,

are of a high standard and are a distinct forward step, it is probable that no statute is adequate, under the existing conditions, to cope with the situation. Drug addiction is an evil which exists to a deplorable extent throughout the country. The writer of this article believes that permanent and adequate relief can be obtained only by International Convention and agreement and the subsequent control from inception, of habit-forming drug imported into or produced or manufactured in this country, by the Federal Government.

A UNITED HEALTH SERVICE.

In the *Public Health Report* issued for February 28, 1918, B. S. Warren, Assistant Surgeon-General of the United States Public Health Service, has outlined the advantages which might be gained by bringing about the organization of a United Health Service. Hygienic conditions are investments which pay, not only in the saving in human life and suffering, but also in dollars and cents. Of this, the achievement of Gorgas, Carter, and their assistants in the Panama Canal is an example. The health work which has protected the soldiers in the camps of this country during the mobilization of millions of men, and the coöperation of military and civil health authorities in the camps and in zones about the camps show to what a degree communicable diseases can be controlled by united effort.

In considering whether or not an adequate health machine is worth while, it is suggested that health records be examined and the results which may be expected weighed according to three standards: (1) the human standard of sorrow and suffering caused by preventable diseases, (2) the actual cost in money of preventable sickness, and (3) the saving to the State of the economic values lost in preventable sickness and death. It is impossible to place a money value on the sorrow endured by a mother over the loss of her baby from some preventable disease; still, over 16 per cent. of all deaths annually in the United States are among infants under one year of age. In considering the actual cost in money of preventable sickness, it has been estimated that the elimination of typhoid fever in Alabama would save \$780,000 per annum.

In analyzing the responsibilities and relations of Federal, State, and local health authorities, it will be found that the duties of these agencies are in some degree identical. The Federal Government has at least three definite responsibilities in the field of public health—international control of disease, interstate control of disease, and a general interest in the health of all the people from the general welfare point of view. The State is concerned with the prevention of the introduction of disease from without, the control of the intercounty, or intermunicipal spread of disease, and the health of all the people within the State from a point of view of general welfare. The local government administrations have similar responsibilities—the prevention of the introduction of disease from without, the control of disease within the jurisdiction, and health of the people in general.

With a proper organization, distribution, and training of the medical and sanitary personnel of the country, and a proper expenditure of the funds now being spent for medical purposes, the writer of this article believes it would be possible to make available to every person adequate medical and hospital services and supplies, and recommendations for the improvement of the State health organizations are included in this report.



"ROOSEVELT INSTITUTE OF AMERICAN FAMILY LIFE,"

A "Roosevelt Institute of American Family Life," to be developed in connection with the Eugenics Records Office of the Carnegie Institution at Washington, has been proposed to the Roosevelt Permanent Memorial National Committee by the Eugenics Research Association of Cold Spring Harbor, Long Island. Announcement of this project was made recently at the headquarters of the Memorial Committee at 1 Madison avenue, New York City. The Eugenics Research Association, which made the proposal, owns eighty acres of land in Roosevelt's own voting precinct and has already laid the foundation for the study of the factors controlling American family life. The plan calls for a memorial institute to be situated in the town of Oyster Bay. "This memorial institute," the Association declares, "will strive to advance those ideas of responsible and patriotic parent-

hood for which Theodore Roosevelt so valiantly battled."

The Eugenics Research Association has addressed a formal memorial to the Theodore Roosevelt Permanent Memorial National Committee. The statement runs in part as follows:

To the Roosevelt Permanent Memorial National Committee,

A MEMORIAL:

We respectfully call your attention to the following factors which contribute to the fitness of this suggestion:

1. The Roosevelt Memorial should be something of permanent and dynamic value to the American people.

2. It should, like the man in whose memory it is built, battle for the advancement of the eugenic ideal in American family life as opposed to economic ease without family responsibilities.

3. The Memorial should be located in Roosevelt's own neighborhood, in the vicinity of Sagamore Hill, to which shrine pilgrimages will be made for all time to come.

4. The safety of the foundation fund could be absolutely secured by placing it as a trust with the Carnegie Institution at Washington, which has already taken over the Eugenics Record Office located in Theodore Roosevelt's own neighborhood. Funds entrusted to this institution would be assured of proper use in exact accordance with their donor's wishes.

5. Its proximity to New York City makes the Oyster Bay neighborhood an exceptionally fitting place for the location of an institute devoted to the advancement of Roosevelt's ideas of racial vigor because:

- a. Within 200 miles of Oyster Bay 20% of the population of the United States reside. Among these residents there exists a great conflict between the desire for economic ease and the call to responsible parenthood.

- b. Facilities for social and economic research and pedigree investigation are at hand: in Oyster Bay town—the Eugenics Record Office, and in New York City—the great libraries, and the headquarters of many social research institutions of national scope.

The Roosevelt Permanent Memorial National Committee was appointed by Chairman Will H. Hays, of the Republican National Committee, early in February, under the chairmanship of Colonel William Boyce Thompson. Ex-President William H. Taft and Hon. Charles Evans Hughes, Republican nominee for President in 1916, are honorary chairmen of the Committee. Among the vice-presidents and members are men of such national distinction as Senator

Lodge, Senator Hiram Johnson, General Leonard Wood, Admiral Peary, Dr. Lyman Abbott, Cardinal Gibbons, John Burroughs, Senator Poindexter, and numerous other senators, congressmen, and governors, as well as representatives of business, agriculture, labor, and education. The committee has opened national headquarters at 1 Madison avenue, New York City.

TETANUS TREATMENT IN ENGLISH MILITARY HOSPITALS.

DURING the entire course of the war, from the early autumn of 1914 through the autumn of 1918, tetanus was a very common and very often fatal infection of wounds received in combat. From time to time summaries have been produced in the *British Medical Journal* which show the relative mortality per cent. among victims of this disease who were treated in home military hospitals. Following is the analysis of 1,226 cases through April, 1918:

1914-1915: Cases, 231; recovered, 98; died, 133; mortality, 57.7%.
 1915-1916: Cases, 195; recovered, 99; died, 96; mortality, 49.2%.
 Aug.-Oct., 1916: Cases, 200; recovered, 127; died, 73; mortality, 36.5%.
 Oct.-Dec., 1916: Cases, 100; recovered, 69; deaths, 31; mortality, 31%.
 Dec., 1916-March, 1917: Cases, 100; recovered, 81; died, 19; mortality, 19%.
 March-June, 1917: Cases, 100; recovered, 71; died, 29; mortality, 29%.
 June-Sept., 1917: Cases, 100; recovered, 85; died, 15; mortality, 15%.
 Sept.-Dec., 1917: Cases, 100; recovered, 84; died, 16; mortality, 16%.
 Dec., 1917-April, 1918: Cases, 100; recovered, 76; died, 24; mortality, 24%.
 Total: Cases, 1,226; recovered, 790; died, 436; mortality, 35.5%.

When the fight was most severe in richly cultivated lands, the high-water mark of death rate was reached.—before the prompt injection of antitetanic serum was made a part of the routine treatment of wounds. In the seventh and eighth analysis the low mortality rate is believed to have been the result of the addition of anti-gas-gangrene serum as well, because it was found that the toxin of gas gangrene bacillus markedly stimulates the growth of the tetanus bacillus.

The period of incubation ranged from three days (the shortest period) to the longest, no fewer than 536 days—incubation in these cases meaning the interval which elapsed between the

date of wound and the onset of tetanus symptoms. The lowest average incubation period of the nine series analyzed was 13.4 and the highest 67.0 days. It is stated that as far as the effect which prompt injection of the antitoxin has on the mortality rate, figures are not at all conclusive on this point, but it is also stated that the treatment of tetanus by carbolic acid or magnesium sulphate has been definitely abandoned in England. Whether a wound be complicated by a fractured bone or not, appears to make no difference in the rate of mortality; and Sir David Bruce, who addressed the Society of Tropical Medicine and Hygiene in 1917 on the subject of tetanus, finds from the figures analyzed no case either for or against the intrathecal route as a method of injection.

A DISTINGUISHED NONAGENARIAN.

It is always a pleasant duty to offer congratulations to a colleague who has survived the vicissitudes of a long professional career and is entering in fair health and spirits upon another year of useful service. But the opportunity to do so to one who is entering upon his ninth decade is so rare that we venture to call our readers' attention to the fact that a notable anniversary occurred on February 27th last, when Dr. Horatio Robinson Storer celebrated his eighty-ninth birthday.

The name of Storer has been associated conspicuously with Boston medicine for the better part of a century. The younger members of the profession who frequent the halls of the Boston Medical Library are familiar with that admirable portrait by Vinton of the father of Dr. Storer. Dr. D. Humphreys Storer, Professor of Obstetrics in the Harvard Medical School, was not only a prominent member of the faculty, and one of the groups of medical practitioners of his day who had the health of Boston families in his keeping, but enjoyed a well deserved reputation as one of the pioneer students of the natural history of his time.

At the period during which the son came into medical life great changes were about to take place in the advancement of the science and the practice of medicine and surgery. The younger Storer was keenly alive to the situation and was a pioneer in abdominal surgery and a conspicuous participator in the controversies that arose

between his colleagues and the more conservative members of the profession.

Failing health prevented Dr. Storer from carrying on his strenuous exertions and forced an early retirement from active practice. His later years have not been passed, however, in unproductiveness. Most notable are his achievements in medical numismatics, the endeavor on his part to portray in this way medical history.

Many honors, both domestic and foreign, have come to Dr. Storer in his long life, and it is pleasant to be able to record evidence of his continued activities, for it is only quite recently that the American Social Sciences Association, a branch of the National Institute of Social Science, has awarded him its gold "Liberty Service" medal for his aid "in the control of pestilence among soldiers and sailors of the United States."

It is to be hoped that many more years of such usefulness are still to be his portion.

PTOMAIN POISONING.

In a recent issue of this JOURNAL was published an obituary of Dr. Thomas F. Harrington, in which it is said that the cause of his death was "ptomain poisoning." Further investigation of this diagnosis, with the physician in attendance upon Dr. Harrington and the death certificate, has disclosed first, that the origin of the diagnosis is unknown, and second, that the immediate cause of death was uremia, the apparent result of a neoplasm which obstructed the ureters.

In this connection it is interesting to note that in Europe the diagnosis "ptomain" poisoning is seldom made and the use of the word "ptomain" in any connection is very rare and quite guarded. On the other hand, in this country, the term has gained a most popular and unwarranted usage. The layman uses it for all acute gastrointestinal attacks, especially if these are traceable in any way to canned foods. In the eyes of the profession, such a diagnosis is becoming, as Jordan so aptly puts it, "a convenient refuge from etiologic uncertainty." It seems worth while here to call attention to the study of this question which is being conducted in the Department of Preventive Medicine and Hygiene at the Harvard Medical School. During the year and a half that these studies have been in progress no ptomains have been dis-

covered which are capable of causing gastrointestinal or other symptoms. Also, in all cases where the diagnosis "ptomain" poisoning has been investigated, in not a single instance has it been found to be based upon fact. In the opinion of these investigators such a diagnosis lacks precision and ought rarely, if ever, be made.

MEMORIAL PROFESSORSHIP TO DR. JAMES JACKSON PUTNAM, 1846-1918.

It is hoped that there may be an endowment of the Professorship of Diseases of the Nervous System in the Harvard Medical School in memory of Dr. James Jackson Putnam.

In the development of this increasingly important branch of medicine, Dr. Putnam was a pioneer in Boston and in the country at large, while he was widely recognized in Europe as a neurologist of distinction. He inaugurated the neurological clinic at the Massachusetts General Hospital in 1872, and through forty years of service was devoted to its interests, and to teaching in the Harvard Medical School. In 1893 he was appointed the first Professor of Diseases of the Nervous System; the professorship was then, and has remained, without endowment.

It is believed that those who have known Dr. Putnam may like to join in endowing this professorship which should always bear his name, and which would fulfill his hope that neurological work of a high order might be developed at the Harvard Medical School. To all of us who knew Dr. Putnam it would also commemorate the devotion and the self-sacrificing work of his lifetime.

President Lowell sends the following letter:

Harvard University, Cambridge,
February 8, 1919.

My dear Dr. Walcott,

The suggestion of founding a Professorship of Diseases of the Nervous System in memory of Dr. James Jackson Putnam appeals to me deeply both on account of the value of such a Professorship to the Medical School, and on account of the deep affection I had for Dr. Putnam and of my reverent esteem for his character. The foundation ought to appeal strongly to all who recognize the ever-increasing suffering caused to our over-sensitized community by nervous ailments, and to all who knew Dr. Putnam as patient or as friend.

Very truly yours,

A. LAWRENCE LOWELL.

It is hoped that \$50,000 may be raised as endowment, of which more than half is already promised. A reply from any one who proposes to contribute is requested now, but payment, either by check or in Liberty Bonds, may be made any time before December 31, 1919.

H. P. WALCOTT,

CHARLES C. JACKSON,

EDWARD W. EMERSON,

EDWARD H. BRADFORD,

MOOREFIELD STOREY, *Treasurer*.

735 Exchange Building, Boston.

MEDICAL NOTES.

MEDICAL AERONAUTIC CONGRESS.—The Inter-Ally Medical Aeronautical Congress opened March 10 to consider the medical problems arising from aviation. Resolutions dealing with physical and psychological tests applicable to candidates for pilots' licenses, the control of flights to high altitudes and the use of oxygen by aviators were presented. It was decided to form a permanent committee to present the views of the medical profession in matters pertaining to aviation. Professor Guillain of the University of Paris was elected president. The United States is represented by Dr. L. G. Rowntree of Minneapolis.

AMERICAN HOSPITAL AT RHEIMS.—It is reported that word has been received at the Paris headquarters of the American Fund for French Wounded that the French Government will deed to the Fnnnd ground in the environs of Rheims on which a great American hospital will be erected. The sum of \$100,000 for the purpose has been guaranteed by the American Fnnnd Organization in the United States, but an endowment fund must still be raised.

ARMY HEALTH REPORTS.—Satisfactory health conditions in army camps at home, with a decided decline in the number of influenza and pneumonia cases, is noted in the report of the Surgeon-General for the week ending March 7. The report from France is not so satisfactory. There were three times as many cases of pneumonia in proportion as there were among the troops at home, and out of a total of 516 deaths in the Expeditionary Force during the week, 414 were due to pneumonia.

THIRD OUTBREAK OF INFLUENZA IN ENGLAND.

—According to recent reports in the *British Medical Journal*, a third wave of epidemic influenza is gathering. In London, for the week ending January 25, thirty-three deaths were attributed to this disease; in the two following weeks fifty-eight and one hundred deaths occurred; and for the week ending February 15 two hundred and seventy-three were reported. Reports from other large cities show that the third wave is spreading throughout the entire country. It is also noted that from Scotland, where influenza figures are not published every week, diseases of the respiratory tract, pneumonia, bronchitis, and pleurisy, have shown a steady increase from the week of January 25; but in these statistics allowances are made for atmospheric conditions. It is not anticipated, however, that this third wave of influenza will reach so great a height as the last one which occurred in the autumn. The autumn figures were reported as 80, 371, 1256, 2458, 2433, 1665, 1278, 942, 660, 332, 186, 95, 65 (the last figure was for the week of January 4). A calculation made on the basis of the autumn figures would give an approximate estimate for the present recrudescence as 70% of the previous mortality. However, this estimate is only a conjecture and given not as an alarm, but as a caution to the general public.

INFANT MORTALITY RATES IN SCOTLAND.

—With the advent of universal reconstruction measures, child welfare work takes a leading part among the interests of every nation. There has recently been included in the *Scotsman*, a newspaper published in the City of Edinburgh, a word concerning the death rate for the new-born during the month of January. This method of acquainting the laity with figures will doubtless have a striking effect on the public who, because statistical reports of the public health do not ordinarily come to their notice, will in this manner better realize that the neonatal death rate is a matter of grave concern. It is a striking indication of the health of a country. The Edinburgh report, for example, in comparing the death rate for the new-born in January, 1918, with that of 1917, adds that "during the month of January thirty deaths occurred in the case of infants under the age of one month, being equal to an annual neonatal mortality rate of 67.4 per 1,000 births. For the corresponding month

of the last year the rate was 37.2 per 1,000 births." There are times, during prevalence of epidemics, etc., when the infantile birth rate may be higher than at others, and is cause for alarm, but under normal conditions the practice of supplying the public with data relative to the mortality rate among infants will go far toward helping the cause of the child welfare workers in their efforts for success.

HONOR FOR MAJOR-GENERAL WILLIAM C. GORGAS.—Major-General William C. Gorgas, formerly Surgeon-General of the United States Army, has been named a Commander of the French Legion of Honor.

APPOINTMENT OF DR. R. M. STRONG.—Dr. R. M. Strong has been appointed professor and head of the Department of Anatomy at the Chicago College of Medicine and Surgery. Dr. Strong has been professor of anatomy at Vanderbilt University.

APPOINTMENT OF DR. JOSEPH C. BOCK.—Dr. Joseph C. Bock has been appointed professor of physiological chemistry in the School of Medicine of Marquette University at Milwaukee. For five years Dr. Bock has been instructor at Cornell University Medical School.

ADMISSION OF WOMEN TO MEDICAL UNIVERSITIES.—A recommendation has been approved by the corporation of McGill University that women should be admitted to the study of medicine provided they have completed the first and second years in arts at McGill University, have taken an Arts degree from a recognized university, or are prepared to take the double course of B.A. and M.D. or B.Sc. and M.D. at McGill University. The medical faculties of Toronto, Queen's, and the western universities are now willing to admit women students.

INFLUENZA AMONG MANITOBA INDIANS.—Approximately 750 deaths from influenza have occurred among the 14,794 Indians of Manitoba. There has been a ten per cent. death rate among the 5,000 Indians in the northern part of the province.

AMERICAN RED CROSS COMMISSION FOR POLAND.—The American Red Cross Commission for Poland, comprising 50 members from all parts of the United States, under the leadership

of Lt.-Col. Walter C. Bailey of Boston, has left Paris for Poland and will travel by way of Innsbruck, Vienna, and Cracow. Reports from Poland state that typhus is spreading in all parts of the country. Medicine is being hastily sent from France and from Red Cross warehouses in Danzig, Copenhagen, and Berne. Cholera, smallpox, and trachoma are also prevalent.

Col. Robert E. Olds, American Red Cross commissioner for Europe, is reported to have said, "This is the first concerted and systematic effort to relieve unhappy Poland, which needs help more than any other place in the world."

JOINT INFLUENZA COMMITTEE.—A joint influenza committee has just been created to study the epidemic and to make comparable, as far as possible, the influenza data gathered by the Government departments. The members of this committee, as designated by the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, and the Director of the Census, are: Dr. William H. Davis, chairman, and Mr. C. S. Sloane, representing the Bureau of the Census; Dr. Wade H. Frost and Mr. Edgar Sydenstricker, of the Public Health Service; Colonel D. C. Howard, Colonel F. F. Russell, and Lieutenant-Colonel A. G. Love, United States Army; Lieutenant-Commander J. R. Phelps and Surgeon Carroll Fox, United States Navy.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.—In a previous issue of the JOURNAL we called attention to an examination of the American Board for Ophthalmic Examinations, which was to have been held in New York on October 25, but was cancelled because of the serious epidemic of influenza at that time. An examination will be held in Philadelphia on June 6 and 7, 1919.

MEDICAL ATTENDANCE BY SEAPLANE.—A physician of the United States Public Health Service on the North Carolina coast has been treating influenza patients for fifty miles up and down the coast, reaching his patients by seaplane. Since it was impossible for him to cover the route between fourteen coast guard stations, which are seven to eight miles apart, in any other way, a naval hydro-airplane, a pilot, and a machinist were placed at the doctor's disposal.

BIRTH RATE IN ENGLAND AND WALES.—The birth rate last year for England and Wales was lower than the death rate. The death rate in London was 18.7 against a birth rate of 15.8. This fact has aroused the feeling that greater efforts should be made to save the lives of babies born out of wedlock. Of the 37,000 illegitimate births annually in England, about 20 per cent. die before they are one year old.

UNION OF ENGLISH PHYSICIANS.—The London *Times* reports that in view of the impending establishment of the Ministry of Health and its consequent effect on the medical profession, a mass meeting of London physicians, both men and women, was held on February 23, and by a vote of 207 to 30 passed a resolution favoring the immediate organization of the profession on a trade union basis. The meeting was distinctly representative of the profession, and the formation of a medical union may be expected within a short time. Its purpose is to safeguard the interest and the dignity of the profession. Twenty thousand members are expected to join the union. An amendment urging that the medical union join the trade union congress and become regularly affiliated with the labor party was rejected by a large majority.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending March 15, 1919, the number of deaths reported was 275 against 289 last year, with a rate of 18.01 against 19.21 last year. There were 46 deaths under one year of age against 49 last year.

The number of cases of principal reportable diseases were: Diphtheria, 64; scarlet fever, 48; measles, 6; whooping cough, 22; typhoid, 1; tuberculosis, 59.

Included in the above were the following cases of non-residents: Diphtheria, 19; scarlet fever, 4.

Total deaths from these diseases were: Diphtheria, 4; whooping cough, 2; tuberculosis, 22.

Included in the above were the following non-residents: Whooping cough, 1; tuberculosis, 1.

Influenza cases, 106; influenza deaths, 14. Smallpox, new cases, 4.

HOME FOR AGED WOMEN IN BOSTON.—The sixty-sixth annual report for the year 1918 of

the Home for Aged Women in Boston calls especial attention to the remarkable health record of the Home in the past year. During a period of seven months, not one death occurred, and in spite of the terrible influenza epidemic which has swept over the city, there has not been a single case among the inmates of the Home. The war work has been continued through the year; and 3,585 articles, including socks, sweaters, button bags, slings, T-bandages, and many other garments have been made and sent to the Red Cross, to the Peter Bent Brigham Surgical Dressings Committee, and to the American Fund for French Wounded. There were admitted to the Home during the year 11 persons, making a total of 99 inmates. There were eight deaths. Since the opening of the Home in 1850, there have been admitted 719 women, with 560 deaths during this time. Sixty-two beneficiaries, amounting to \$5,875, have been granted nurses who have worked in Boston and are now in need. The Home appreciates the generosity of those who have helped to support it, and trusts that among many worthy appeals, the Home for Aged Women will not be forgotten.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—On March 13, 16 influenza cases and 12 lobar pneumonia cases were reported to the Health Department, with 8 deaths from pneumonia and 3 from influenza. On March 14, 20 cases of influenza with 1 death and 6 cases of pneumonia with 8 deaths were reported. There were 10 influenza and 9 pneumonia cases, and 2 deaths from influenza and 2 from pneumonia on March 15.

On March 17, 13 influenza cases and 1 of pneumonia, with 1 death attributed to each cause, were reported to the Health Department. Seventeen new cases of influenza and 6 of pneumonia, with 6 deaths from lobar pneumonia, were reported on March 18.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—On March 9, 29 new cases of influenza and 6 of lobar pneumonia, with 3 deaths due to influenza and 6 to pneumonia, were reported to the Boston Health Department.

On March 21, there were 20 influenza cases with 3 deaths and 6 of lobar pneumonia with 4 deaths. On March 22, 27 cases of influenza and 8 of pneumonia, with 1 death from influenza and 9 from pneumonia were reported to the Health Department.

The Massachusetts Medical Society.

THE next annual meeting will be held in the Copley-Plaza Hotel, Boston, June 3 and 4, 1919.

THE COMMITTEE OF REVISION OF THE UNITED STATES PHARMACOPOEIA, 1910-1920.

The following circular has been received and is hereby brought to the attention of Fellows:

THE NEXT PHARMACOPOEIA.

May, 1920, only a little more than a year hence, will again witness the assembling in Washington of the delegates to the United States Pharmacopoeial Convention. This fact should stimulate preconvention activity on the part of those who have had experience with the present revision and are prepared to suggest improvements for a new edition.

It is desirable at this time that pharmacists, physicians, chemists, botanists, biological experts, or any others who use the U.S.P. IX, should submit to the chairman of the revision committee, either personally or through associations, such helpful information as their experience may have suggested, or which may have come to their attention.

These suggestions will be compiled systematically and circularized to the present revision committee, the authors being credited in each instance with the recommendations; and the compilation will be submitted to the 1920 Convention for the benefit of the new committee of revision.

You are earnestly urged to coöperate with the committee of revision in the preparation of this report, and it is requested that in sending in your suggestions, the special form enclosed be employed. Please use a *separate sheet for each subject*. As many forms as are desired will be mailed on request.

Respectfully submitted,

CHARLES H. LAWALL, PH.M.,

Chairman of the Committee of Revision of the United States Pharmacopoeia.

39 South Tenth Street, Philadelphia, Pa.

Miscellany.

IN MEMORIAM.

ALFRED MONTGOMERY GOODALE, A.B., M.D.
Æsculapian Club, Chapter 1919.

ALFRED MONTGOMERY GOODALE died suddenly from pneumonia at the Boston City Hospital on February 21, 1919, aged 29. He was taken ill the day after finishing his final examinations at the Harvard Medical School and died six days after receiving his certification for his degree.

Goodale was born in Waltham, Mass., on September 27, 1889. He graduated from Harvard college in 1913, and while at college played on its freshman football team, the varsity hockey team, and rowed on the varsity crew. He was a member of the Institute, D.K.E., Hasty Pudding, Iroquois, and Porcellian clubs.

After graduating from college, he studied in Paris for a year and engaged in business for the following year. Deciding then to study medicine, he entered Tufts College Medical School in the fall of 1915, transferring to Harvard the following year. At the Harvard Medical School he was a member of the Stork Club, and was president of his class the last two years. His fourth year in the School was spent as pathological interne at the Boston City Hospital. Had he lived, he would have commenced his internship on the East Medical Service at the Massachusetts General Hospital, in June, 1919.

He is survived by his mother, Mrs. Alfred M. Goodale of 19 Perry street, Greenwich Village, New York City; a brother, Captain Fairfield Goodale, now with the American Expeditionary Forces; and two sisters, Dorothy Dana and Catherine.

No man in his class was more respected and beloved than Montgomery Goodale; no man gave more promise of future usefulness in his profession. The vacancy he leaves in his class cannot be filled; his most lasting monument will be in the memory of those who associated with him.

The Leader we looked to is vanished.

We shall wish for his counsels in vain;

The good that he promised is banished,

To return to us never again.

Let us better ourselves by reflection;

Guide true to the light that he shows;

Let us seek, in his memory, perfection;

Let the stream broaden out as it flows.

MEMORIAL TO DR. CUTTS.*

WHEREAS: Our fellow member and late secretary, Henry M. Cutts, has for many years been Medical Examiner in the eighth district of Norfolk County, representing the Town of Brookline, and, by his efficient and faithful service in office, and, by his professional ability and nobility of character, has gained for him the confidence of the medical profession and of the community and has endeared himself to all who had the good fortune to know him; now be it resolved that, in the decease of Henry M. Cutts the Massachusetts Medico-Legal Society has been deprived of a member whose attainments and accomplishments have always been exercised for the good of the profession and the community, and in his decease the Society has lost a loved and valued member, and the Commonwealth of Massachusetts a faithful and efficient public servant.

Resolved: That a copy of these resolutions be spread upon the records of the Society and sent to THE BOSTON MEDICAL AND SURGICAL JOURNAL and to the family of our late member.

Committee:

WILLIAM C. MACKIE, M.D.,

GEORGE L. WEST, M.D.,

Recording Secretary.

* Resolutions passed at a meeting of the Medico-Legal Society.

Correspondence.

CONCERNING "HARVARD UNITS."

Boston, March 14, 1919.

Mr. Editor:—

Among the Medical Notes in your issue of March 13, I find a statement which, owing to its inexactness, causes me embarrassment, for it is somewhat unfair to the group of officers constituting the professional personnel of U. S. Army Base Hospital No. 5.

The facts of the case, which may not be without historical interest, are as follows:

In 1915 the Western Reserve University sent a unit to Paris to serve for a period of three months in the American Ambulance at Neuilly. This group was followed by a "Harvard Unit" which served for another three months, and in turn by a group from the University of Pennsylvania, which, under Dr. Hutchinson, remained on duty until this country came to participate in the war, when the American Ambulance was taken over officially by our army.

The success of these ventures led to a proposal, fostered by Mr. Robert Bacon, Sir. William Osler, and others, that certain American Universities send similar units to serve with the British, and Harvard contributed a unit, latterly under the command of Dr. Cabot, which, since 1915, was stationed at No. 22 General Hospital, Camiers, with the B. E. F.

Another outcome of the rotating university services at the American Ambulance was the proposal, from

the Surgeon-General to Dr. Crile and myself upon our return in 1915, that corresponding units be organized, under university auspices, which could be called upon for like services in case this country should be drawn into the conflict.

Steps had been taken in this direction when it was pointed out that, according to statute, organizations of this sort in time of peace would have to be called into being by the American Red Cross Society. Consequently, a meeting was held in Washington and a representative of the Army, Colonel Kean, was attached to the Red Cross for the purpose of organizing a number of units along these lines, their personnel to represent certain selected medical schools and hospitals in the country, the Harvard Medical School being included.

In the course of time, Colonel Kean visited Boston and, for various reasons which need not be gone into, it seemed best to have three units from this community. One of them was to be recruited from the staff of the Massachusetts General Hospital under the direction of Dr. Washburn, another from the Boston City Hospital under the direction of Dr. Dowling, and the third was, as originally proposed, to be a Harvard Medical School unit of which I was appointed director. The membership of this unit was chosen so that it would be as representative as possible of the Medical School and its affiliated hospitals—the Massachusetts General, the Boston City, and the Children's Hospital, the Eye and Ear Infirmary and the Dental School, as well as the Brigham Hospital. It is incorrect, therefore, to state that Base Hospital No. 5 was composed of doctors and nurses from the Brigham Hospital, for, though it contributed generously, it can make no such claim.

After our entry into the war, the Red Cross hospitals automatically reverted to the Army, and the three Boston Hospitals were successively numbered Base Hospitals Nos. 5, 6, and 7. Base Hospital No. 5, owing perhaps to its early start in organization, was one of the first six hospitals sent overseas, all of which were apportioned to the British Expeditionary Force. It originally took over a hospital in Camiers, and its official title in the R.A.M.C. was No. 11 General (Harvard, U.S.A.) Hospital. After November, 1917, the unit was transferred to Boulogne and became officially known as No. 13 General (Harvard, U.S.A.) Hospital.

I do not believe that the medical officers who first or last have been on the staff of U.S.A. Base Hospital No. 5 are particularly interested in having the unit called by other than this official title, for it happens to be the only one of the three units organized with a Harvard University background which contributed to the medical services of the A.E.F., many of its staff having been detached for special services and a mobile hospital having been organized from its personnel.

With all this in view, whatever additional designation, if any, may be given to Base Hospital No. 5, I wish to make clear for the sake of my colleagues, enrolled from other hospitals, who held important positions in the organization, that the unit was not organized as a Peter Bent Brigham Hospital unit, but as a Harvard Medical School unit.

I hope that you may find space for this perhaps too lengthy statement in your columns.

Very truly yours,
HARVEY CUSHING.

NORMAL HUMAN BLOOD PRESSURE.

Camp Devens, Mass., March 15, 1919.

Mr. Editor:—

The conclusions as to the normal human blood pressure reached by my fellow-townsmen, Dr. C. J. Enebuske, as reported in this JOURNAL, March 6, (clxxx, 10, pp. 272-275) are both so sweeping and so very far at variance with all recent researches known

to me that I think it is incumbent on the gentleman to show us how the surprising leading opinion was developed in his mind. One would like to know the nature of the "radialis-arteriometer" and the physics of its action, especially. The tendency at present is to lower our former estimate of the average arterial tension rather than to raise it.

This medical matter is too important to be passed over uncontested, for some busy, uncritical practitioner somewhere might conclude forthwith that the "maximum tension of the radialis artery at a level higher than 140 mm. but not exceeding 150 mm. Hg. (really) is the normal arterial tension" and he might act accordingly. Won't Dr. Enebuske give us the technique? A great many earnest, not to say scientific, persons have been "born in Missouri."

Sincerely,

GEORGE VAN N. DEARBORN.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting of the Suffolk District Medical Society will be held April 30, 8.15 P.M., at the Boston Medical Library, 8 The Fenway.

Speakers:

Dr. David L. Edsall. "Some Relations of the Practitioner to Industrial Medicine."

Dr. Cecil K. Drinker. "An Unusual Type of Metallic Poisoning."

J. BAPT BLAKE, M.D., *President*.

GEORGE R. MINOT, M.D., *Secretary*.

CENSORS' MEETING.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 8, 1919, at 4 o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least two weeks before the examination.

GEORGE R. MINOT, M.D., *Secretary*.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.—Meeting for Medical Improvement, United States Hotel, Boston, April 3, 1919, at 11.30 A.M. Reader, Ralph C. Larrabee, M.D., Boston. Subject, "Disturbances of the Heart Rhythm" (for F. H. Gile, M.D., Braintree).

C. A. SULLIVAN, M.D., *Secretary*.

RECENT DEATHS.

DR. CHARLES S. SPENCER, First Lieutenant, Dental Corps, U. S. A., of Concord, died, on March 13, at the Massachusetts General Hospital. He had been stationed recently at Camp Greenleaf, Ogleshorpe. Dr. Spencer was a graduate of the Harvard Medical School and Tufts Dental School, and was a member of the Massachusetts Dental Society. He was born in Chelsea, on May 2, 1869, and had practised dentistry in Concord for eight years.

DR. CLARENCE JOHN BLAKE died recently at his home in Boston. He was born on February 23, 1843. He received his medical degree from Harvard in 1865. After studying abroad he received the degree of O.M., U. of Vienna, in 1868. Dr. Blake lectured and became professor of otology until 1913, when he resigned.

He was an active member and took a leading part in the management of many institutions, such as the Massachusetts Charitable Eye and Ear Infirmary, and the Children's Hospital. To literary matter dealing with his profession he contributed many articles. From 1879 to 1882 he was editor of the *American Journal of Otology*. He was a member of the Ameri-

can Otological Society and was president of it from 1876 to 1877. He was also a member of the Boston Society for Medical Improvement and of the Boston Society for the Advancement of Physical Education. He was elected president of the congress of ear specialists in August, 1912.

DR. ELLENWOOD B. COLEMAN died recently at his home in Nantucket, where he was born in 1862. Dr. Coleman studied medicine at the Chicago Homeopathic College, and was graduated in 1888, when he returned to practise in Nantucket.

DR. ERNEST F. NORCROSS died recently at his home in Dorchester. Dr. Norcross was born in North Grafton in 1851. For the last seventeen years he has been examining physician for the Metropolitan and Globe Life Insurance Companies. He was a graduate of the Homeopathic School at Boston University.

DR. HENRY LEONARD DWIGHT, of San Diego, Calif., died at the Crary Hospital, Dartmouth, Mass., Sept. 6, 1916, of chronic nephritis. He was a native of New Bedford and joined the Massachusetts Medical Society in 1896 from that city. He had lived in California since 1912.

DR. HEIMAN CARO, Captain, M.C., U. S. Army, of Chelsea, Mass., and formerly of the staff of the Monson State Hospital, died in Mars, France, from bronchopneumonia, Jan. 22, 1919, aged 29 years. He was a graduate of Harvard Medical School in 1914, and was a Fellow of the Massachusetts Medical Society.

DR. CHARLES FREDERICK DOLE died at Sharon, March 25, aged 43 years, after a prolonged illness. He was born in Chelsea and graduated from Harvard Medical School in 1900. He joined the Massachusetts Medical Society from Dorchester, where he practised for a few years. He is survived by his widow and two daughters.

DR. RICHARD HENRY LAWLER died at his home in Methuen, February 12, aged 47 years. He was born in East Douglas, Mass., June 18, 1871; graduated M.D. from the Dartmouth Medical School in 1898; joined the Massachusetts Medical Society in 1906 and had practised at Methuen.

DR. EVERETT WHITE died at Lynn, February 27, aged 49. He was a graduate of the Baltimore College of Physicians and Surgeons in 1897 and joined the Massachusetts Medical Society in 1914.

DR. CALVIN B. KING died in Belchertown, on March 21, at the age of 79 years. Dr. King was born in Ware, Mass. He was graduated from the Medical School of the University of New York and practised in Ware, Otis, Granville, and for the past 35 years in Belchertown, where he served as town physician.

DR. MARY WALKER died recently in New York, at the age of 87 years. She was the first woman commissioned to serve on the surgical staff of any army in time of war, and during the Civil War she served as assistant surgeon with the rank of first lieutenant. Dr. Walker was awarded the Congressional Medal of Honor for bravery and valuable services in the field. In 1855 she received the degree of M.D. at Syracuse, and later practised at Columbus, Ohio.

DR. ABEL FITZWATER PRICE died in Springfield, on March 22, at the age of 71 years. Dr. Price was born in Lawrenceville, Pennsylvania, and was graduated from the University of Pennsylvania Medical School in 1858. In the same year he was appointed assistant surgeon in the Navy. He was Admiral Dewey's fleet surgeon at the battle of Manila Bay, and was president of the Naval Examining Board from 1904 to 1909. At the time of his death, Dr. Price was taking a course at the Massachusetts Agricultural College.

The Boston Medical and Surgical Journal

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Original Articles.

LABORATORY OF SURGICAL RESEARCH, CENTRAL MEDICAL DEPARTMENT LABORATORY, AMERICAN EXPEDITIONARY FORCES, A. P. O. NO. 721, FRANCE.

To Brigadier-General J. M. T. Finney, M. C.,
U. S. A., Chief Consultant in Surgery.
American Expeditionary Forces.

In accordance with your direction, an effort has been made to standardize procedures for the surgical treatment of thoracic injuries; first, by determination in the laboratory of the anatomical and physiological reactions fundamentally significant in repair; and, second, through the practical application of the principles thus established of the treatment of the wounded. The experimental work was done in the Laboratory of Surgical Research, and the clinical service was rendered in various hospitals of the forward areas reserved for the care of the non-transportable wounded.

It is impossible to submit a final report, because laboratory observations are incomplete and late clinical results are unavailable. An unexpectedly early disassociation of those engaged in this investigation has also made it impracticable to prepare illustrations, and to

make proper acknowledgment of benefits derived from the work and writings of others.

Problem. Therapeutic methods were desirable to reduce the immediate and remote mortality; to extend effective surgical treatment to some of the more severely wounded, hitherto considered hopeless, and to secure an earlier and more complete functional recovery in a larger proportion of those convalescing from thoracic injuries. The requirements were a safe and simple method of performing thoracotomy: an operative technique for pulmonary repair that would provide immediate reinflation and reestablishment of some degree of respiratory function, and, later, assure maximum pulmonary inflation and elasticity.

This problem consisted of the following factors:

1. Parietal repair—Primary healing must be assured.
2. Limitation of pleurisy—Reduction in intensity, extent, and duration.
 - a. Elimination of pleural irritation.
 - b. Determinate factors in pleural resistance.
 - c. Lung repair, preserving its elasticity.
 - d. Reinflation of lung—Reestablishment of intrathoracic negative pressure.
 - e. Immobilization of affected side of chest.
 - f. Drainage with conservation of normal negative pressure.

3. Anesthesia—administration of nitrous oxide and of oxygen so as to control intrapulmonary pressure.

Experiments. An epidemic of rabies which occurred during the experimental stage made it imperative that all stray dogs be destroyed. The mayor of the city in which the laboratory was located gave his permission to use the animals that remained unclaimed at the pound for experimental purposes. The dogs were invariably operated upon in ether or nitrous oxide narcosis, and were protected against unavoidable distress by a free use of morphine before and after the operation. The facilities provided for this work by the Central Medical Department Laboratory and the Research Department of the Red Cross were so excellent that they would have been welcome in front area hospitals.

Parietal Repair. Failure to obtain air-tight parietal healing after thoracotomy leads to inevitable distress, frequently to death. Immediate and lasting union of the parietal pleura is more important than of any other structure. It is the surest protection against complete breakdown through extension of inflammation from without inward, or, more important still, from within outward. Opportunity for satisfactory repair is assured if the pleura be united surface to surface, as in intestinal suture, and if an adequate blood supply is provided by the avoidance of tension upon sutures.

Rib resection permits thoracotomy with the least damage from the standpoint of healing. After incising the anterior periosteum in the mid-line of the rib, it is carefully reflected so as to avoid injury to intercostal vessels or nerve. When the rib is resected a similarly placed incision in the posterior periosteum opens the chest. This loose periosteum, the inner reflection lined with pleura, immediately retracts and forms at the margins of the incision a welt of thickened tissue admirably adapted for holding sutures without interfering with essential blood supply. Contraction of the intercostal muscles, with respiration, produces immediate separation of wound edges after thoracotomy. These margins cannot thereafter be maintained in approximation without undue suture tension; consequently the ribs just above and below the incision must be brought abnormally close together. This rib approximation can be accomplished by passing a suture about them, and tying it with sufficient tension. Absorbable

sutures, various types of catgut, and kangaroo tendon proved to be incapable of resisting this strain until there was firm healing. Silk, linen, and cotton are inferior to wire. Heavy silver wire, or that made from aluminum bronze alloy, proved to be satisfactory.

It is essential that mattress sutures be used in the pleural closure to guarantee surface approximation of the serosa. No rib denuded of its periosteum should be permitted to appear within the pleural cavity, as such potential foreign bodies lead to pleurisy or recurrent hemothorax. This is avoided by stripping the periosteum a short distance beyond the line where the rib is divided, and so placing the marginal stitches that the pleural pucker begins beneath and lateral to the rib ends.

Layer by layer the muscles and fascia are closed with interrupted stitches, so that they are accurately but not too snugly approximated. Because of the abnormal rib approximation there is some dead space to fill, but also, redundant tissue with which to fill it. The principle of imbrication variously applied serves this purpose admirably. At intervals these interrupted stitches should include the layer next below. This reinforces, prevents dead space, and, most important of all, limits the extension of infection. A separate closure of the superficial fascia is profitable.

Dogs are peculiarly susceptible to empyema. In a series of thoracotomies, this method of closure broke down only in consequence of extension from infected pleurisy, and when tension on the parietal pleural stitches, resulting from inadequate rib fixation, caused the parietal pleura suture line to give way. Similar observations have been made repeatedly at human necropsies, and indicated the necessity of guarding against this danger.

Limitation in Degree and Extent of Pleurisy. All foreign bodies are irritants, and all irritants in the presence of recent infection are undesirable. Blood itself is sufficiently irritant to the pleura to provoke a sero-fibrinous reaction. This reaction is sufficiently intense in the presence of hemothorax to unite the visceral and parietal pleura by fibrinous adhesions in the abnormal relationship consequent upon pulmonary compression and dislocation. Full blood is more irritating than defibrinated blood, which in turn is more irritating than blood serum. Fibrin could not be introduced intrapleurally without thoracotomy, which invali-

dated direct comparison. Almost certainly it is more irritating than full blood, hence the desirability of removing all the blood and coagula. Full blood coagulates in the chest in rapidity and in completeness directly proportionate to the degree of tissue injury, which determines the conversion of prothrombin into thrombin. Hemothorax induced with a minimum tissue injury, coagulates very slowly, because blood platelets and leukocytes degenerate slowly under conditions so slightly abnormal, which is a partial explanation for the belief that blood does not clot in the pleural cavity. Removal of other foreign bodies, bone, metal, bits of liver, etc., is even more essential. Flushing the pleura with solutions, saline, Dakin's solution, etc., gives an appearance of greater microscopic cleanliness, but reduces resistance to an extent that makes irrigation unjustifiable. Moreover, the slightest additional irritation to the pleura increases subsequent effusion.

b. Determinate Factors in Pleural Resistance. Area for area the healing reactions of the pleural and peritoneal serosa are histologically and physiologically similar, if not identical. The peritoneum is accepted as one of the best healing and most resistant tissues in the body; the pleura is known to have much less resistance. An anatomical and physiological comparison is illuminating.

The parietal pleura and peritoneum differ little in extent and in richness of blood and nerve supply. The visceral peritoneum is much greater in extent than the visceral pleura (the entire peritoneum is estimated at 98% of the skin surface), a material proportion of which is upon the omentum. Resistance to infection seems to be proportionate to the extent of the visceral serosa and the richness of its blood supply. It is impossible for dead space to occur intraperitoneally, and immobilization of intraperitoneal viscera can be made virtually complete with the administration of opium. The more complete the immobilization of the peritoneum in the presence of intraperitoneal irritation, the less the consequent effusion and diffusion, and the more rapid (4 to 6 hours) is the formation of fibrinous adhesions. These adhesions, inevitable in the healing of serous membranes, are desirable to protect local resistance.

The peritoneum has been shown to have the capability of exuding serum at the rate of 5% to 6% of the body weight an hour, and to ab-

sorb in almost the same rapidity. Under certain conditions intraperitoneal injections are virtually equivalent to intravascular. In the pleural cavity the potentiality for rapid effusion seems to be proportionately as great as the peritoneal, but the powers of absorption are much less. An amount of normal saline that would be taken up in a few minutes by the peritoneum may be shown with the aid of the fluoroscope to require 48 to 72 hours to disappear from the pleural cavity.

The three conditions precedent to smooth healing, elimination of irritation, physiological rest and increased blood supply are equally effective in promoting intrapleural resistance. It is because of the inter-dependence of circulatory and respiratory functions upon pleural integrity that its preservation assumes such great significance. Elimination of irritants needs no further discussion. Physiological rest cannot be made as nearly perfect intrapleurally as intraperitoneally, without affecting the even more important factor of circulation. Lung can be immobilized in two ways, by deflation or compression, and by inhibiting costo-diaphragmatic movements. Lung deflation is produced with some degree of pneumothorax, which means dead space and decreased resistance. Lung compression can be attained only by the presence of a foreign substance in the pleural cavity, and this, too, means decreased resistance. Both of these conditions cause pleural irritation and pulmonary deflation. Pleural irritation, in addition to causing increased effusion and pleural thickening, provokes inflammation in the adjacent lung parenchyma. This cortical pneumonia varies in degree and in extent with the duration and intensity of the pleurisy. It is prone to organization rather than to resolution, and the resulting increase in peripheral scar tissue is in part the explanation of the difficulty in securing subsequent pulmonary inflation. A possible explanation is the decrease or failure of pleural effusions to be absorbed. Protracted deflation causes a retraction of elastic tissue, vessels and nerves similar to the neuro-vascular-fascial contraction, consequent upon the fixation of joints in flexion. The blood supply to lung and pleura is proportionate to the extent of physiological inflation.

Experimental evidence indicated that pneumothorax so rapidly absorbed from normal pleura was slow to disappear in the presence of

an acute pleurisy. The effects of the introduction of various fluids intrapleurally were studied to determine the feasibility of a clinical application of this principle of immobilization of injured lung during the early period of healing. Normal saline was found to be the least irritating, and to be absorbed with desirable rapidity in 48 to 72 hours. However, where salt solution was put into the pleural cavity of thoracotomized animals, the parietal pleural suture line broke down in each instance. This was attributable to the force of respiratory and cardiac impulses transmitted through the fluid, and to the direct effect of the saline solution upon an adequate deposition of fibrin. Moreover, both of these methods produced increase in the rate and the distress of respiration. Inhibition of costo-diaphragmatic movements could with safety be induced in two ways. The rate and depth of respirations could be decreased with full doses of opium, which is effective when given in subtoxic amounts, by decreasing metabolism and consequently reducing oxygen requirements, with little or no depression of the respiratory centres under this condition. Or the diaphragmatic excursion could also be eliminated by blocking the phrenic nerve. It was found that injections of magnesium sulphate and of quinine and urea hydrochlorate were ineffective. Cocain was superior to novocain, in that less accurate infiltration of smaller amounts was effective. The resulting paralysis lasted from four to five days, and was succeeded by a gradual return of diaphragmatic function. The effect upon the diaphragm determined fluoroscopically was an immediate inhibition of contraction on the injected side. The only notion, and that very limited, was due to contractions from the contralateral side, transmitted through the central tendon. The relaxation of the paralysis permitted intra-abdominal pressure to raise the level of the diaphragm on the affected side, but insufficiently to cause serious pulmonary deflation. Diaphragmatic paralysis carried with it a decrease in costal excursion, so that the total reduction of intrapleural motion is considerable. These results were the same whether the phrenic was injected in the neck or in the chest, and no untoward results such as bronchitis or pneumonia were observed. This is precisely the mechanism that nature has developed in combating pleural pneumonia. When these principles were applied to thoracotomized ani-

mals, the beneficial effects were definite. A small group of dogs were not given morphine after operation. Their convalescence was less certain, longer, and the distress increased. A series in which the phrenic was injected showed a remarkable freedom from distress and a reduction in the amount of post-operative pleural effusion. Still more significant was their general condition on the fourth or fifth day, when the diaphragm resumed its function. This stage of convalescence corresponded to the tenth to fourteenth day in those animals subjected to identical operations, but in which no phrenic injection had been made.

In order that the three cardinal conditions upon which healing depends may be established after thoracotomy, the following precautions must be observed: Reduction in irritation by the least mechanical trauma; protection of the serosa against exposure and drying; preservation of lung elasticity; accurate pleural approximation; the establishment and maintenance of normal negative intra-pleural pressure; and the restriction of respiratory function for the first few days.

c. Lung Resection and Surgical Repair. Resection or deep incision of lung parenchyma must be made so that the resultant impairment of air and blood circulation will not interfere with possibilities of healing and of the return of function. Studies were made of the anatomy involved by injecting the bronchial and pulmonary arteries with a barium suspension, and then making radiograms of excised inflated lungs. Branches of the bronchi and pulmonary arteries were given off at nearly right angles to the parent stems near the hilus, but as the vessels extend toward the pleura, the angles of departure of the branches become progressively more acute. Physiological effects were determined by arterial and bronchial ligation in the living animal. Ligation of the bronchial artery causes atrophy of the part supplied, which on section shows a peculiar slatey pallor. Ligation of the pulmonary artery was followed by necrosis, which affected the periphery (pleural) primarily, and extended thence backward to the hilus, with a characteristic convoluted regularity of outline. Ligation of a bronchus to any lobe produced a purulent bronchitis, and later broncho-pneumonia with pleurisy. This was attributed to infection of secretions retained under pressure, due to interference with normal drainage. Ligation of very small bronchial

branches is productive of no serious consequences. A simple practical method of determining when an obstructed bronchus endangers the corresponding parenchyma is provided by the use of positive intrabronchial pressure. So long as the parenchyma can be inflated it is safe. An obvious danger of infection from the air and mucus forced through the severed bronchi was found experimentally to be negligible. A suspension of *B. prodigiosus* was insufflated intratracheally, positive pressure established, and subsequent culture taken from the bronchi after incising the lung—these results were negative. *Lycopodium* granules similarly insufflated could not be demonstrated upon incised lung surface.

The lung tissue up to the margins of surfaces to be united after operation must be viable and capable of function. Parenchymatous surfaces must be adequately approximated to insure healing without interference with function. Lung parenchyma is the equal of any tissue in the capacity for repair and for spontaneous hemostasis. All branches of the bronchial artery, distinguishable by spurting red blood under higher pressure, must be ligated. Also the larger pulmonary vessels should be tied. Several bronchial twigs are disclosed by the bubbles escaping from them, because of the positive pressure anesthesia described later. Those that are visible should be ligated.

Approximation of the lung surfaces must be achieved without producing avoidable induration from either the repair or from subsequent cicatrization, so that there may be little effect upon the elasticity of the organ. This closure must permit immediate lung function; the pleural surfaces must be in apposition for air-tight closure. These conditions prohibit the use of mass sutures. Fine stitches, as many as are required to give satisfactory approximation, are to be placed within the lung in full inflation. They should be placed superficially and tied just tightly enough to produce approximation. Surprisingly few are required to accomplish this closure. Pleural surfaces are to be united by a continuous mattress stitch of the Cushing type; this can be effected with little puckering, and with an air-tight suture line. When complete, one knot is the only foreign body exposed upon the surface.

d. Inflation of Lung to Reestablish Normal Negative Pressure. Inflation of the lung during operation has essential advantages. It facil-

itates surgical manipulations by bringing the operative field nearer the surface, reducing thereby need for traction. Traction transmitted to the mediastinum is prone to produce an immediate and considerable drop in the systemic blood pressure. Inflation is the only way by which hemorrhage and escape of air can be controlled under conditions approaching the normal.

It is possible to inflate and deflate the lungs when the chest is opened without affecting the systemic blood pressure, because of the powers of compensatory adjustment in the rate of flow, amount and distribution of blood in the pulmonary circulation. Inflation up to normal limits does not apparently throw an increased burden upon the right heart. Air-tight parietal closure, while the lung is thus distended, permits an immediate reestablishment of approximately normal negative intrapleural pressure, since the residual pneumothorax is so limited as to be negligible.

e. Immobilization of Affected Side of Chest. Injury alone suffices to restrict costal excursion upon the side involved. If the injury be severe enough to provoke pleurisy, hemorrhagic or serous, there may be also a limitation in the diaphragmatic excursion. This reflex reduction in motion can be supplemented but little by the use of pressure bandage. A snug bandage has good effect upon the wound healing. If immobilization of greater degree is desirable it can be attained by posture and by nerve block.

f. Drainage. Experiments on the treatment of infected pleural injuries simulating war wounds had just been started when orders came for duty in the forward area. The principles, but not the means of drainage, had been determined. An acceptable drain must be inserted in the costo-phrenic sinus so as to offer no obstruction to full pulmonary inflation, and where the consequent pleural reaction would be least harmful. It must permit air-tight insertion, and have a simple automatic one-way valve. This method would protect the degree of inflation and negative pressure obtained at operation, and tend to increase both if they were subnormal. Thus it would be applicable both in primary and secondary drainage, and when inserted with positive pressure anesthesia make feasible free drainage of early empyema before adhesions were present. Ultimately a satisfactory means was devised. An "L"-shaped piece of glass tubing 12-15 m.m. in diam-

eter, with its arms 3-4 cm. long, was completely covered by thick rubber tubing. The rubber tubing was cut flush at one end, and here the flat valve from a box respirator was slipped over and securely tied in place. The rubber tubing extended beyond the other end far enough to reach the level of the crest of the diaphragm and prevent occlusion.

A short low rib resection permitted this tube to be inserted with the end from which the rubber tubing projected on the inside, and turned upwards. Air-tight layer closure that lasted for four or more days, was easily accomplished. This simple apparatus fulfilled requirements already given, and under conditions that reduced individual attention to post-operative patients almost to the vanishing point.

g. Anesthesia. A simple method of giving nitrous oxide and oxygen, utilizing tank pressure, to secure needed degree of inflation, was devised by Captain Gwathmey. A full pre-operative dose of morphine made possible the induction of deep analgesia, without increasing the nitrous oxide and oxygen rates above 3 to 1, which Lieutenant-Colonel Cannon's experiments had proved to be the limit of safety in the presence of shock. Lieutenant Cattell's observations had indicated that morphine thus given had value as a prophylactic agent against on-coming shock, and therapeutic value when given early in the presence of shock. No untoward result from depression of the respiratory centre was noted.

Animal experiments showed clearly that administering anesthesia under tension, particularly when the chest was opened, was dangerous if the gas or ether was given in increased concentration. It also demonstrated that thoracotomy with all incidental manipulations, such as dislocation and operation upon lungs, could be performed under the primary stage of anesthesia. Manometric observations showed that when the pressure present in the mixing bag reached 8-16 m.m. Hg. it sufficed to distend the lungs completely. That degree of pressure is present when the bag fluctuated little during inspiration. Since this degree of tension in the bag produced an intrapulmonary pressure that was well within the limits of safety for dogs, the manometer was not deemed a necessary adjunct for human use.

A safe sequence in practice was found to be as follows: After the effect of the pre-operative hypodermic of morphine was present, adminis-

trations of pure oxygen under no tension were started. Then very gradually the pressure was increased, and the administration of nitrous oxide started. Rapidity of induction of the anesthesia was undesirable. Avoidance of excitation and the producing of gradually increasing inflation were essential. During the operation the proportions of the gas-oxygen mixture and the pressure transmitted to the trachea were varied to meet conditions. After the parietal pleura was closed the amount of nitrous oxide was gradually reduced; last of all, oxygen under pressure was continued until the patient was conscious.

The American Red Cross nitrous oxide apparatus perfected by Captain Gwathmey and adopted by the Army, fulfilled every requirement. This apparatus provides a mask that can be rendered relatively air-tight by close approximation to the face, an escape valve, a mixing bag close to the inhaler, and a rough gauge for estimating the proportion of the gases.

Intrapulmonary pressure was raised by increasing the rapidity of the flow of gases from the tanks, and by increasing the pressure upon the face piece. It was lowered by decreasing the rate of flow of the gases or by releasing the valve or decreasing the pressure which held the face piece in place. Thus, any degree of desirable inflation or deflation was promptly available to meet operative requirements. In general the degree of pressure utilized was that best suited to the animal or man under operation.

This method gives all practical requirements for intra-thoracic surgery without necessitating deep anesthesia for the introduction of intra-tracheal or endopharyngeal tubes. Moreover, its safety and ease of control has removed the chief obstacle to a wider application of surgical therapy.

h. Practical Application. So closely related is the physiology of man and dog, in spite of the gross anatomical differences in the pleura and mediastinum, that the principles established experimentally were directly applicable to the wounded. The human chest and lungs are far easier to manipulate, and more resistant to infection. Methods had to be varied to meet conditions, but, so far as was determined, there was no change in principles indicated from the end results.

Granted proper facilities, satisfactory triage, early transportation, and a trained personnel, 100% of chest wounds demanded surgical treat-

ment but not necessarily thoracotomy. This radical statement is made from the standpoint of the wounded individual, and takes no account of battle conditions and the requirements of evacuation. It is based upon the following facts: Experience has demonstrated the impossibility of eliminating bone injury without exploration in through-and-through bullet wounds of the chest, for example. Under the analgesia described it is easy to follow a bullet tract down to the entrance or exit from the thoracic cavity. Not infrequently an unsuspected rib fracture, even complete and comminuted, is disclosed. Further investigation, even when an unbroken but perforated rib was presented, will commonly show that the inner compact portion of the rib has been splintered, loose fragments driven into the lung or attached fragments into the pleural cavity. Such injuries may be accompanied by an inconsiderable amount of hemothorax, or it may develop that an injured intercostal artery is accountable for the bleeding. Since the pressure in the systemic circulation is six to eight times higher than it is in the pulmonary circuit, and the spontaneous control of bleeding in the thorax has been developed to combat the lesser pressure, an accurate control of such hemorrhage is of utmost importance. Surgical treatment of these lesser injuries is simple; some rib resection is indicated. The positive pressure will have returned the wound in the lung close to the parietal wound, through which it can be examined. If the lung injury be considerable, enough rib must be resected to give sufficient room to repair the lung damage. If it be a dry puncture, it may be disregarded as the positive pressure would have started anew bleeding from any dangerous source. If the lung hole be bleeding, it can be readily closed with a purse string suture of the visceral pleura, after gently withdrawing a cone of lung through the parietal opening. Should the injury to the parietes and to the lung be slight, and the hemothorax considerable, the uncoagulated portion of the latter can be removed by introduction of the aspiration nozzle (to be described later). The orifice of entrance or exit which gives the best approach should be used. After the lung is allowed to collapse a fairly satisfactory baling out is made possible. If the patient be in a dangerous condition, the irritation from the clots which remain may be compensated for

by the saving of time, and manipulation, attendant upon a more radical operation.

The wound of exit should also be explored, because of the danger of rib damage. Here, too, for no evident reason, bone fragments can be driven backward into the lung.

Three means of parietal closure can be employed. If a considerable opening has been made, a routine closure, with rib stay of wire, is indicated. If the parietal opening be less extensive, visceral pleura may be stitched into the defect, or the same may be plugged with a transplanted muscle surface. In any case, the closure should be air-tight, and the last sutures tied, after full inflation is attained. Experience has shown that injuries thus treated repair well, and that parietal debridement of even bullet wounds is not contra-indicated. A large hemothorax and hemopneumothorax of unusual proportions demand radical treatment, though caused by through-and-through bullets without bone involvement. A large hemothorax provokes serious pleural reaction and pulmonary compression. Immediate aspiration is contraindicated, because fresh bleeding may result, and because part of the blood and all of the clots will fail of removal. Immediate intervention is indicated for reasons previously given. Large pneumothorax indicates the possibility that a large bronchial branch has been opened, and the danger of empyema from such a source.

The preceding groups may comprise 40%, or even more, of the chest injuries, depending upon the type of conflict. If to them be added groups of similar injuries produced by small shell fragments, they will together comprise those deemed by many as best treated expectantly. This conservative opinion is the result of the dangers attendant upon thoracotomy performed with open methods of anesthesia, or without the use of nitrous oxide as above described. There is a group of very grave chest injuries that during the stress of battle must be denied surgical treatment. During periods of less pressure these patients should be given every chance of recovery offered by operation, even though there is reason to question the probability of immediate survival.

Again, the analgesia from nitrous oxide and oxygen is the big factor, so little is the distress it causes. If surgical intervention offers the faintest chance of recovery, improbable by expectant measures, the individuals deserve the

chance. The fetish of statistics, and particularly the immediate mortality rate, has had too great an influence upon the attitude of clinicians functioning as medical officers. The recovery of no individual should be jeopardized by wanton surgery, but, on the contrary, every service should be rendered by giving even the worst risks any chance operation may offer.

There is another group made up of those having sucking wounds, large retained foreign bodies, liver injuries, and obvious compound fracture of the ribs and scapula that indisputably are suitable for surgical treatment. The methods of operating upon individuals showing such injuries can be divided into two types.

When the parietal wound is so severe that its treatment is going to contraindicate any further intervention, or when the intrathoracic injuries can best be approached through that pathway, adequate rib resection should be made at such a site. This method of approach has distinct advantages. It obviates additional incisions, leads directly to a part at least of the intrathoracic damage, reduces the duration of operation, and eventually reduces the total adhesive pleurisy by bringing the parietal wound only in contact with the visceral. It has the disadvantage, if the wound be high, low, or near the median line anteriorly or posteriorly, of restricting the field of intrathoracic exploration. Further, the tissues about the incision are bruised and infected, and cannot be expected to heal ideally. Neither can the deep closure of such a wound be entirely satisfactory. Unfortunately, this method is demanded in a considerable proportion of the severely wounded.

A more satisfactory method is to excise and repair the projectile wounds according to the methods indicated in the discussion of through-and-through bullet injuries. The chest is then opened by an incision placed ideally; or the thoracotomy may be performed first, and the results of the intrathoracic examination would determine if more need be done.

A section of the fourth rib, long enough to provide space for an easy insertion of a closed hand, should be removed from its postero-lateral aspect. This resection can be effected without cutting across muscle fibres that will be needed directly in closing the deeper wound. The latissimus dorsi can be drawn backward, and the pectoralis major drawn forward, after dividing its inferior lateral fibres close to their

attachment, to secure adequate relaxation. The serratus magnus can be split between its fibre bundles. The opening thus obtained will allow inspection or palpation of the entire cavity, unless there are extensive adhesions. No mechanical rib spreader is needed, and should not be used, as such instruments crush the intercostal muscles, and interfere with the blood supply to the pleura. Additional exposure can be obtained only by rotating the third and fifth ribs. This rotation is best accomplished by lifting directly upward with broad bladed abdominal retractors.

With this exposure it is possible to operate on virtually any part of non-adherent lung. After partial division a lobe can be grasped with a Tuffier forceps, guided towards the opening in the chest wall, and made to present therein without traction simply by increasing the degree of inflation. If a diaphragmatic injury is suspected, resection of the fifth rib will make its repair possible. After such an operation an accurate closure is easy, and the healing satisfactory.

Experience in taking care of the wounded taught other principles worthy of record. Skin incisions should not be made completely at first, unless there is little doubt about the deeper injuries. When these have been determined through an incomplete incision, the balance can be adapted to circumstances. As a rule, simple, straight incisions are the best. At times flaps must be reflected, as the skin and fascia may be the only covering that can be provided for the pleural closure, which in itself may be incomplete.

In general, muscle splitting methods comparable to the gridiron incision for appendectomy, are most satisfactory. In this way debridement of successive layers can be done, cut muscle bundles kept distant from the site of injury, and smooth muscle surfaces preserved for final approximation. It is well to remember that recovery cannot take place without parietal healing, and parietal healing can occur after considerable bruising and soiling, even if a very extensive debridement is omitted. This applies even to the erector spinae group of muscles.

Bone injuries are handled with greater difficulty. Ribs may be resected at will, and should be sacrificed always to give proper approach, and at times to permit of better closure. Spinal injuries, if the cord is intact,

should be treated as any other compound fracture; converted, if possible, into a simple fracture by primary suture. If there is a cord lesion present only sucking wounds should be operated, and these only to secure parietal healing. Scapula may be tilted, or resected, leaving as much periosteum and margins for muscular attachments as conditions permit. The parietal pleura must be protected. A hole in it is about as easily repaired as a hole in a drum head, and there is about the same facility in its mobilization. Defects that cannot be repaired without tension should be filled either by stitching visceral pleura to the margin, or, if low enough, suturing to the diaphragm. If this is not possible, a smooth muscle surface should be applied.

When access to the thoracic cavity has been obtained, it is wisest to remove free blood at once, to prevent any further clotting. Any form of suction apparatus suffices. There should be a glass or metal tube long enough to reach any part of the chest, and having its distal end covered with a coarse wire bulb to prevent pleura and large clots from plugging the intake. Just before closure, all the clots and excess fibrinous exudate should be removed with gauze, if this is impossible manually.

Foreign bodies must be removed unless embedded in ribs, so that extraction requires another procedure unwarranted by the patient's condition. It is particularly essential to extract projectiles from the mediastinum, or when they are in close contact with large vessels.

Lung wounds may be closed safely with less resection than similar injuries to other tissues, because of the exceptional powers of resistance and repair of this organ. More than a slight trimming of shaggy margins should be reserved, for those instances in which the blood and air circulation are irrevocably impaired. This presents the most difficult question to decide in the chest problems. When does hemorrhagic infiltration cease to be a recoverable lesion and amount to hemorrhagic infarction? Some lungs in which this infarction had been suspected to have occurred were resected, and recovery followed. In other patients partial lung resection, followed by death, failed to show at autopsy that the resection of itself had contributed to the fatality. In no instance where resection was absolutely indicated by the anatomical condition, and prevented by the general condi-

tion, did a survival occur. These fatalities were associated with a particularly virulent empyema. Only a little less baffling was the question of collapse. A part of the lobe, usually the lower, would be found atelectatic. The associated injury was generally severe and involved outlying ribs. Such a collapse could not be inflated during operation. None such was resected, because of depressed general condition. All that were recognized died. At autopsy the same portion was still collapsed, the balance of the lung slightly emphysematous, and an empyema was present. Apparently, the pleura overlying the segment of such abnormal lung ceases to function defensively if it has not become an actual foreign body.

Adhesions should be severed or torn only when necessary to make urgent repair. The tissue thus exposed is little resistant. All of these perforated chests are infected. The control of purulent pleurisy depends entirely upon the defense of the tissues exposed upon pleural surfaces. Chronic pulmonary emphysema sufficient to prevent normal deflation so reduces pulmonary circulation as to impede healing of lung parenchyma, and to lower pleural resistance. Foreign bodies in the lung parenchyma should be removed if the risk is not too great. All rib fragments should be removed, as the most dangerous factor in producing subsequent inflammation. Bullet and shell fragments larger than a few mm. in diameter can usually be palpated, and easily extracted.

The larger the bronchial branch that is opened, the greater the danger of infection, particularly when there is already access from the mucosa to the pleura. If such an opening cannot be made air-tight, it should be sealed with a pleural graft.

Injuries to the diaphragm are readily repaired. Liver injuries introduce bile into the pleura, where it is more harmfully irritant than in the peritoneum. The same sutures that reunite a torn diaphragm can be made to unite, or at least to fix the liver laceration. Trans-pleural drainage works beautifully where it is not needed. Injuries to other abdominal organs may at times be repaired by enlarging the left-sided diaphragmatic defect.

Primarily, drainage is indicated in the presence of an established pleurisy, particularly where it is associated with a liver injury, and consequent bile irritation, or with irritation resulting from

urine which has seeped into the chest from renal laceration, and when complicated by a sucking wound of many hours duration. It is also probably safer to drain at operation, when wide resection or extensive collapse make impossible an elimination of pneumothorax, and when there is reason to doubt the viability of lung or pleura. It must be remembered that whereas drainage of the general peritoneal cavity is impossible, drainage of the pleural cavity is feasible and safe, if properly done. The old dictum, "when in doubt, drain," as applied to the peritoneum, came to be, "when in doubt, don't drain." It is quite possible that the reverse may prove to be the outcome in the pleural cavity.

Indications for secondary drainage will be considered in the discussion of post-operative treatment.

i. Pre-operative Treatment. An individual with a chest wound is particularly in need of physical and psychic rest. This can be provided by an early administration of a full physiological dose of morphine (one-third to one-half grain). Other benefits to be derived from this drug have been enumerated.

Care of the wound includes accurate hemostasis, particularly of the intercostals. Suckers should not, as a rule, be provisionally sutured. Such a suture may lead to a considerable emphysema, with consequent reduced resistance in the tissue about the wound, may give a false sense of security, which leads to delay in operation, and assures some degree of pulmonary deflation. Unless there is a brisk uncontrollable hemorrhage from inside the chest, it is better to apply a large pad to the chest wall, completely covering the wound, fix it in place with adhesive, and then place a firm bandage, or a swathe, about the thorax. Besides decreasing distress, such a dressing acts as a suction valve, permitting the egress but not the ingress of air, and, by encouraging inflation, protects the pulmonary circulation.

Uncomplicated chest wounds are notably unlikely to foster shock. On the other hand, they are frequently productive of a high venous pressure, resulting from disturbed pulmonary circulation. Therefore, when shock is present, any intravenous injections must be given with special care not to overburden an already embarrassed right heart. Particularly important is a determination of the venous pressure under these conditions. If possible, transfusion

should be done after pulmonary inflation has been established with the positive pressure of the anesthetic. Even when there is no shock, if there be a large hemothorax, a blood transfusion is indicated when hemostasis is accomplished. A grave anemia may be masked by an unusual distribution of blood, because of compression of the pulmonary circulation.

j. Diagnosis and Classification. Physical and fluoroscopic examination furnish fairly accurate data from which to determine urgency of operation. Projection of the wounds of entrance and of exit, or of the wound of entrance and the location of a retained missile (unless it was free in the pleural cavity) gave the course of the projectile approximately, and identified the structure probably involved and to some extent indicated the degree of damage. Especial care was taken in attempted determination of the presence and nature of bone injury. Urgency of operation as an immediate life-saving procedure is primarily to be considered, but ultimate functional recovery is also a factor in the following classifications:

Group 1. *Hemorrhage.* This group includes those suffering from the acute anemia of recent hemorrhage, and those who are still bleeding. Measures to be adopted must include immediate hemostasis, the safe-guarding against secondary hemorrhage, blood transfusion, and, when possible, repair according to established principles.

Group 2. *Sucking Wounds.* If conditions permit, this type should be treated like any other chest injury, plus closure of the parietal defect. Otherwise, simple closure, or a closure plus primary drainage, is demanded for immediate safety, relegating other measures for the future to determine.

Group 3. *Bone Involvement.* Every penetrating chest wound should be explored down to the pleural wound. Bone fragments are the most dangerous foreign bodies to both pleural and pulmonary healing, immediate and remote.

Group 4. *Pneumothorax.* This, uncomplicated, is rare, and due to injury of a large bronchus. Closure of this defect is demanded to prevent lethal complications.

Group 5. *Hemothorax of Symptoms.* Those of this group suffering from acute anemia have been considered in Group 1. The balance show respiratory and circulatory embarrassment due to pressure. As a rule, they have better chance of recovery if given immediate surgical care.

permitting accurate hemostasis and repair of visceral injuries.

Group 6. *Foreign Bodies.* The presence of a foreign body is sufficient to indicate operation for its immediate removal when it is large (and then there will usually be additional indications), when it is in close proximity to vital structures, or when lying free in the pleural cavity. All foreign bodies should be removed incidentally to operations for other reasons, when this is compatible with the immediate safety, and if the removal requires no manipulations that will impair functional recovery.

Group 7. *Hemothorax of Signs.* Simple hemothorax without symptoms. If limited in amount it should be treated expectantly, until there develops signs of infection or a rapid increase in amount, when radical treatment is indicated. If the hemothorax is large, and particularly when dense clots are demonstrable fluoroscopically, radical treatment promises earlier and more complete recovery with slight, if any, increased danger. A decision as to the treatment to be given to moderate sized hemothorax must depend on many factors, preference being given to conservatism.

Group 8. *Through-and-Through Chest Wounds* from bullets, without any of the previous indications, or similar wounds from small shell fragments are usually non-operative types, under ordinary conditions, and always under battle pressure.

k. *Post-Operative Care.* From a functional standpoint the first 48 hours following thoracotomy under positive pressure anesthesia contrasted most favorably with those performed under open ether. Dyspnoea and distress were vastly reduced, and post-operative shock cut to a minimum. Indeed, not infrequently the patient left the table in better condition than before operation. The degree of functional return effected by the elimination of post-operative pneumothorax contributed largely to this result. Further limitation of post-operative effusion, reduction in the incidence of pneumonia, and elimination of contralateral pulmonary collapse were remarked. These cases were observed for four to twelve days, but unfortunately, under existing circumstances, the end results could not be determined.

Morphine, by reducing the respiratory rate, and by affording rest, is a prime requisite in the post-operative treatment of chest wounds. The dosage must be guided by the condition

and reaction of the individual. The indications of its efficacy are freedom from cough, pain, and distress.

Posture is an over-rated point in post-operative treatment. Any position producing a lateral curvature of the spine, with the concavity toward the affected side, will lessen the extent of respiratory movement on this side. The simplest means to produce this end, pillows, etc., are sufficient. The degree of elevation of a patient depends entirely on his condition and comfort.

Post-operative effusion inevitably consequent upon thoracotomy may be met by one or two divergent plans of treatment. The dry method attempts to keep the pleural surfaces in continuous contact by repeated aspiration. This facilitates the formation of adhesions and hastens a return of lung function. Such a plan is impracticable in field work, so that the expectant plan was followed. Pressure signs, or signs of infection of the effusion, were the primary indications for aspiration. An argument for this plan lies in the rest afforded by splinting the lung and restricting diaphragmatic excursion in the early period. Pleural effusions do not assume recognizable proportions until the second day, so that for this period pleural resistance is not materially affected by the presence of the fluid. The secondary indication for aspiration is the failure of this fluid to be absorbed.

Early return of the maximum degree of pulmonary function is an important feature in post-operative treatment. Neither active nor passive lung exercise should be attempted until the patient is afebrile. If, when begun thereafter, they are followed by recrudescence in temperature, such exertions should be discontinued until the patient is again afebrile. Measures involving some degree of personal attention or interest, such as blowing exercises, or the simple expedient of cutting down the respiratory rate to a minimum (by a watch) promises the greatest degree of success. Inconclusive observations on the use of positive pressure attained by giving oxygen through an anesthetic inhaler in this stage of the post-operative care were made. Exercises bringing into play the muscles of the thoracic cage should be introduced as soon as the patient is able to get out of bed.

l. *Complications.* Post-operative pneumonia is commonly contralateral and of the lobular or

bronchial type. Infrequency of its occurrence in this series obviously has some relation to the use of positive pressure and of gas and oxygen in anesthesia. It is possible that the inordinate respiratory effort induced by post-operative pneumothorax of the open method of anesthesia predisposes to, or actually excites an insufflation pneumonia. The treatment of this pneumonia is largely supportive. Cold air is contraindicated, unless the patient's condition be particularly robust.

Contralateral collapse did *not* occur in this series. Positive pressure was probably effective in eliminating this complication.

Post-operative empyema bears a definite relationship to the nature and condition of the wound, and its duration before operation. The condition of the pleura at the time of operation is of great prognostic value. A shaggy, fibrinous exudate, or a dirty pleura, argue against an uncomplicated convalescence. The incidence of empyema in patients operated upon later than 24 hours after the receipt of the injury, mounts very rapidly. A sudden increase in the fluid level, the patient's condition, together with signs of sepsis, and the bacteriologic and microscopic study of fluid removed by exploratory puncture, all determine the final diagnosis of empyema. If the organism be staphylococcus or pneumococcus, and if the patient's condition be good, repeated aspirations are permissible and often suffice. In the presence of streptococcus empyema, or that due to members of the anaerobic group of bacteria, immediate drainage is desirable.

Post-operative empyemas are productive of limiting adhesions in inverse ratio to the virulence of the causative bacteria. Consequently, the urgency for drainage is overbalanced by the contraindication of pulmonary deflation, unless some positive pressure anesthesia be employed and a suction type of drainage introduced. Using such methods, immediate secondary drainage can be established with a diagnosis. It must be remembered that under field conditions, close individual attention is impossible, and repeated aspiration, as in civil practice, cannot be performed.

m. Wound Healing. When fairly good surgical technique is possible, primary sutures of chest wounds give better results than wounds of a similar type elsewhere, because of the possibility of complete immobilization.

During a period when there was a pestilence

of flies, an undue number of such wounds suppurated. These infections tended to remain superficial, and delayed only that part of wound healing. The percentage of empyema was also highest at this time.

In a series of 120 operations involving the chest wall, in not a single instance did gas gangrene develop, and no virulent streptococcus infection occurred.

n. Results. Statistics showing mortality rates in war injuries can never be convincing, because of the multiplicity of factors affecting the condition of the wounded. The series here analyzed is made up from some men wounded when in good condition, in warm dry weather, and given early treatment, but of more wounded of the opposite category. The work was done in field and mobile hospital units; the surgical facilities varied from wretched to excellent. Battle conditions permitting, no selection of cases was made to eliminate the bad risks. Any chance of operative benefit was given, and very gratifying recoveries resulted when fatalities were to be expected. This plan must carry with it a high mortality rate (29.6). Five deaths occurred upon the operating table, and twelve within 18 hours after operation. Thus, 63% of the total mortality (27) occurred in patients too weak to withstand the strain of operation. Among these there were very few that might have recovered if treated expectantly, but there were more that did recover, who would have died if not given surgical treatment.

The operations were performed by Lieut. J. L. Yates and Major W. F. Verdi. The same methods were employed, and virtually identical results were obtained.

The results of 91 penetrating wounds of the chest treated by thoracotomy are analyzed in Tables I and II.

No further discussion of this Table will be attempted, except to call attention to the interesting fact that though chest wounds were more commonly caused by shell fragments, the percentage of deaths was proportionate to those caused by bullets.

In Table II a grouping of this series of 91 thoracotomies is attempted on the basis of the indications of operative urgency. The sub-grouping into "simple" and "complicated" has reference to the entrance of multiple factors, such as sucking wounds plus bone involvement, for example, into the decision. Overlapping,

TABLE I.—PENETRATING WOUNDS OF THE CHEST TREATED BY THORACOTOMY.

Total cases 91		Total deaths 27 (29.6%)	
NATURE OF MISSILE		DEATHS CAUSED	
Bullet	39 (42.8%)	11	{ 40.8% of total deaths 28.2% of group wounded by bullets
Shell	52 (57.1%)	16	{ 59.2% of total deaths 30.7% of group wounded by shell
Group I. Chest alone involved:		DEATHS	
Uncomplicated	57	6	(10.5%)
Profound shock	7	5	(71.4%)
Totals	64	11	(17.1%)
Group II. Chest involved, together with:		DEATHS	
Abdomen	9	6	(66.6%)
Other serious wounds ..	14	7	(50%)
Added profound shock (to multiple wounds)	4	3	(75%)
Totals	27	16	(59.2%) deaths

therefore, occurs in the complicated sub-head-ings.

TABLE II.—A GROUPING OF THE SAME ACCORDING TO A PLAN OF OPERATIVE URGENCY.

	No. DEATHS		PER CENT. MOR- TALITY
I. Hemorrhage—acute anemia	1	1	100
II. Sucking wounds:			
Simple	3	0	
Complicated	26	10*	38.4
III. Bone involvement:			
Simple	27	6	22.2
Complicated	42	14†	33.3
IV. Pneumothorax:			
from large bronchus injury	0	0	
V. Hemothorax of symptoms:			
Simple	4	0	
Complicated	13	6	46.1
VI. Foreign body:			
Simple	6	0	
Complicated	4	0	
VII. Hemothorax of signs:			
Simple	2	0	
Complicated	1	0	
VIII. Through and through with- out signs:			
Simple	0	0	

* Includes one spinal wound, one abdominal wound, and one gas gangrene.

† Includes five abdominal wounds, one femur, and one section of vena azygos major.

Particular attention is drawn to the fact that no thoracotomy was performed on a simple, uncomplicated through-and-through wound of the chest. Individuals suffering from such wounds, therefore, are not included in the 91 cases. Further, it will be remarked that this series includes only those penetrating wounds of the chest treated by thoracotomy and none

of the grouping of non-penetrating chest wounds operated without thoracotomy.

In conclusion we must express our grateful appreciation of help and encouragement received. To you, Sir, we are indebted for the opportunity to study this problem, for practical suggestions and sound advice. We wish to thank the officers, enlisted men connected with the Central Medical Department Laboratory, for their coöperation, particularly Col. J. F. Siler, Director of Laboratory Service, A. E. F., whose willingness and capacity to be helpful is unlimited. The American Red Cross, through the Research Department under Col. Alexander Lambert, has given essential assistance by furnishing facilities and equipment, both in the Laboratory and in field hospitals. We are greatly indebted to Major J. M. Steiner for his help and suggestion, and to Captain M. A. Blankenhorn for the benefits of his unusual experience derived from service in the B. E. F., under Col. A. B. Soltan.

Miss Anne Barnard, A. N. C., and Miss Anna Fitzgerald, A. N. C., have unfailingly shown the ability, energy, and devotion to duty typical of the highest ideals of the American trained nurse. Sgt. 1st Cl. P. W. Vestal, who has served with us from the first, and Pvt. K. Baronian, detailed more recently, have at all times been competent and willing.

Respectfully submitted:

J. L. YATES, Lieutenant-Colonel,
W. S. MIDDLETON, Captain.

ROBERT DRANE, Captain,

JAMES T. GWATHMEY, Captain.

SUGGESTIONS FOR IMPROVING MEDICAL EDUCATION.

BASED UPON A STUDY OF THE PRODUCT OF THE MEDICAL SCHOOLS.

BY ROBERT W. LOVETT, M.D., BOSTON.

MEDICAL education has been much discussed, analyzed, adjusted in various ways and experimented with. Standardization has been attempted and certain definite requirements formulated by the Council of Education of the American Medical Association and by the State Boards of Registration, and the whole subject carefully analyzed and criticized by Flexner's report for the Carnegie Foundation.¹ All this has helped to raise the standard, to make it more effective, and to close many inferior schools. But nearly all of the study and of the criticism has dealt with the process of medical education in the school and but little attention has been paid to the analysis of the product of that education, the doctor.

It is obvious that the aim of the medical school should be to furnish to the community efficient, capable doctors; men capable of diagnosing and effectively treating disease, of relieving suffering, of promoting the public health, of teaching medicine, and of advancing our medical knowledge, remembering always that the great majority of the profession, after their graduation, are engaged in practice, in healing the sick. The knowledge possessed by the doctor, taken in large numbers, is on the whole the best test of the efficiency of the medical schools.

This study of the product of the schools is therefore presented because a process of manufacture may be appraised in one of two ways, first, by observing the process itself, or second, by studying the product of the process. The study of the product is, of the two, the more reliable because it is based on performance and adaptation to public need. The study of the product throws light on the process as a whole and does not allow us to be misled by the fact that some parts of the process may be excellent while other parts are inferior, a matter which might be overlooked in the study of the process itself. The analysis of the product soon detects an inferior part or a disproportion or lack of correlation between them. It becomes, therefore, a study of effectiveness.

When the United States entered the war it was evident that we had only a handful of

medical men competent to carry on the orthopedic work which would obviously be required in the camps, the hospitals, and the field, and in October, 1917, intensive courses for the instruction of military surgeons in orthopedic surgery were begun and were carried on until into December, 1918. The duties assigned to me by the Surgeon General from the time that I entered the army until my discharge fifteen months later, were concerned wholly with this instruction. During this period I was associated as instructor with nine intensive courses of this character, seven given at the Harvard Medical School in Boston and two at the Army Medical School in Washington.

It became evident in the first course that the instruction must be fundamental, and that in the time at our disposal we could hope only to deal with principles. The method elaborated has already been dealt with by me in a short paper entitled, "A Plea for a More Fundamental Method in Medical Examination."²

Although the subject taught was orthopedic surgery it is used here merely as an example to throw light on medical education in general because it became necessary to discuss more or less fundamental matters such as the anatomy and physiology of joints, their reactions to trauma, toxins, and infections, the growth and development of bones and their reactions to trauma and infections, the character of nerve impulses, and the most general principles of nerve localization in relation to paralyses and spinal fracture and injury. It also became necessary to discuss muscular functional anatomy and nerve supply in its bearing on the treatment of paralyses and the use of muscle training and transplantation. This matter is mentioned to show that criticisms of the knowledge possessed by the men was based upon a broader ground than an analysis of their knowledge of flat foot, tuberculosis of the spine, lateral curvature, etc., which might be classed as the highly specialized orthopedic subjects.

Material. The material for observation consisted of picked men from the medical corps of the army, selected and detailed to the course by the Surgeon General. There were 238 men, representing forty-three States, the District of Columbia, and Porto Rico, and coming from seventy-six medical schools. Some had just graduated, others had practised twenty years or more, nearly all had some surgical experience and some had practised orthopedic surgery.

Many were the leading men in their communities and the majority of the men were above the average.

Each course lasted from six to eight weeks and instruction continued for six hours each day, which proved to be the maximum amount of intensive teaching that the men could stand. Outside study of some hours a day was required. The contact of the instructor with these men was very intimate and in my case the instruction, which was almost wholly on patients, was carried on by the method of asking questions and drawing out the information in that way, on the ground that they were more likely to remember what they learned in this way. The didactic lecture was reduced to a minimum and an opportunity was thus incidentally afforded the instructor to learn what these men really knew, which would not have been learned from mere lectures.

Conferences were constantly held in which the students were asked to criticize the course and methods, and many of the men have been good enough to write suggestions as to improvements in the course after they had gone into active work. It is impossible to speak too highly of the interest, the enthusiasm, and the co-operation of all of these men in making the course successful. My previous experience in teaching had been largely with under-graduates whom I had instructed for many years. At the end of the time I had examined them and they passed on to other courses or to hospital work and I knew practically nothing of how effectively I had taught them. I was in the position of a surgeon operating extensively in a hospital with no follow-up system and with no way of estimating results. I had done a good deal of graduate teaching but never on any large scale and never as a "whole time" teacher. Suddenly I found myself a whole time teacher of a fairly large class of graduates in an intensive course and this course was repeated nine times in fifteen months. I was now in the position of a surgeon with a follow-up system but no hospital. In other words, I was dealing almost wholly with the results of teaching and trying to repair holes in the fabric left there in the schools by their teachers, of whom I had been one.

To repair these defects it became necessary to analyze and define them; and this was surprisingly easy when one set about it, because they practically classified themselves.

These defects persisted in all the classes and characterized men from every school, from every State, and of every age and degree of experience. Appearing to be thus universal, it seems fair to attribute them to the education that they had received, or had not received, in the medical schools.

The defects classify themselves as follows:

1. Superficial and slipshod methods of examination, a tendency to make snap diagnoses and in general no approach to thoroughness.

2. An inability in most instances to think out a case on sound fundamental lines and to base treatment on meeting an established pathology.

3. A lack of an accurate or practical knowledge of anatomy, a very hazy knowledge of physiology, and often an incomplete understanding of pathology.

The men as a rule were not close observers and described unfamiliar conditions loosely and in inaccurate language. This, however, seems rather a minor defect compared to those just mentioned.

These briefly are the defects that have been most evident. There have been men of varying degrees of ability and many individual defects. The men from some schools have been a little better than the men from others, but the defects mentioned have been present in nearly every individual and the graduates from no one school can be exempted from the above criticisms.

The three main defects mentioned may be further discussed as follows:

1. *Lack of thoroughness in examination and diagnosis.* The almost universal disposition of the men when a case was presented to them for diagnosis was to lay great and undue stress upon the history, so often misleading; to examine only the part complained of, and to proceed to a snap diagnosis, most often without a differential diagnosis. When two different conditions existed in a patient shown them, they almost invariably missed the second. They were warned early in the course that thoroughness of examination would be required and were repeatedly told that one pathological condition did not exclude others, but so firm are the old habits that, for example, a patient with a pain in the legs and some swelling of the tibiae was examined by a student and passed by the whole class as syphilis of the tibia when, by turning him on his face and looking at his

spine, it was evident anywhere in the room that he had Pott's Disease and a well marked knuckle.

This has seemed to me perhaps the most serious defect to be met. The men under observation, however, were largely men of surgical training and what has been said would probably be less true in men trained in internal medicine. This defect would seem to reflect directly back on medical education, for a man once taught to be thorough fears to fall back into hasty methods on account of the danger and inferiority of such methods.

The suggestion made on the mind is that the men have been taught by individual teachers of different degrees of teaching ability and of different standards, but that no one has taught them thoroughness or methods of examination as a whole; that they have been supplied with blocks of knowledge of different size, shape, texture and durability but that no one has taught them how to use the blocks as a whole to advantage. It is interesting to note that these men took readily to careful methods and became more thorough in their work before the close of their course.

2. *Inability to think out cases logically and to base treatment on the pathological condition present.* When an unfamiliar condition was presented to the student in a patient, he was required to examine it thoroughly, to make a differential diagnosis, to describe what pathological condition was present, and he was then asked to prescribe a treatment based on that pathology which would meet it. If it was like any condition that he knew, he would jump to the treatment of that and try to remember what he had read about it, but if it was new territory he was apt to flounder and not use, in the solution of the question, his knowledge of anatomy, physiology, pathology, and mechanics. If a tuberculosis of the hip or a flexed knee was presented, the student sought refuge in prescribing "some sort of a brace" and no part of the course was so hard as to make them formulate for themselves the mechanical needs of a case, based on the pathology and some simple means of meeting it. This inability to apply fundamental facts of anatomy, physiology, mechanics, and pathology to familiar or unfamiliar surgical conditions suggests that there is no effective correlation between the different departments of the schools, especially between the so-called preclinical and the clinical departments,

but that, in the clinical courses affections are described, demonstrated, and the treatment formulated each by itself, and the student is to put that affection in a pigeonhole in his mind and remember it as well as he can.

Particularly is it evident that they are not accustomed to think out problems in the light of their anatomical and physiological knowledge. A patient with chronic tuberculosis of the knee with subluxation of the tibia was shown. The subluxation was recognized, but in a class of thirty-five, not a man was able to account for it on anatomical and physiological grounds, although there was a diagram on the blackboard of the shape of the bones of the knee joint. By a series of questions they were made to work out the sequence that muscle spasm was present, that the hamstrings were stronger than the quadriceps, that the tibia was therefore flexed and that the shallow articular facets on the tibia permitted it to slide backward. This instance was typical of the inability to apply fundamental knowledge which was undoubtedly possessed by every man in the class.

Another typical instance of the same universal tendency was demonstrated when a patient was shown wearing two artificial legs. One of them was obviously much shorter than the other and no man in the room could suggest any means of estimating the difference except by a tape measure from the anterior superior spine, which is notoriously unsatisfactory. Finally, after prolonged questioning, a man suggested making the pelvis level by building up under the short leg and measuring the amount of the correction required, but neither he nor anyone else could describe any simple means of finding when the pelvis was level, and they had to be told to hang a plumb line in the cleft between the buttocks and correct until the spine was under it. Such instances as these, occurring practically every day and every week, month after month, impress on the instructor's mind that the medical student has not been taught to use what knowledge he has.

3. *Lack of knowledge of fundamentals. Anatomy.* As an example of the situation in anatomy, twenty students were asked at an examination, at the beginning of one course, the following questions:

1. What muscles are supplied by the ulnar nerve? 2. Describe the ilio femoral ligament of the hip, the crucial ligaments of the knee, the internal lateral ligaments of the ankle joint

3. The structures in relation with the shoulder joint. 4. The description of five important muscles. 5. What soft parts would be injured in a gunshot wound carrying away the head of the fibula?

Although many of these men were fresh from an anatomy course in one of the camps, the results were not gratifying. The average percentage was forty-three, only five men were marked above fifty, and eleven were from twenty to forty.

One object of the course was to teach men to diagnosticate nerve injury by the loss of muscle function, and in all the sections the men were taught the function of the muscles, not only on the cadaver, but also on the living subject, by questions, and most men knew the function only of a few important muscles. To teach them this so that they knew enough of muscle function to be of any use required several days' instruction of several hours each, backed up by hours of anatomical study at home. On the whole the younger men had a better knowledge of the subject than the older men. It might be questioned by some whether it was necessary for the average doctor to know anatomy in any such detail and it might be asked how many of such could do better in the examination given; but if it is not necessary to know this why should so much time be spent on teaching anatomy, and if a man with surgical training does not know the answer to such questions as those asked, how can he be said to possess any practical or useful knowledge of the subject?

Physiology. As an instance of this aspect of the case, twenty-five men were asked in an oral examination to state what the effect of a fracture of the spine in the upper dorsal region and in the middle lumbar region, compressing but not destroying nervous structures, would be on the patella reflex. Not one man answered correctly. Now these men had, of course, been taught the physiology of reflex action; but either they had forgotten it, or a practical application of it had not been taught them, or they had failed to use their minds in the examination. Of the passage of a motor nerve impulse from cortex to muscle, as a rule, they knew very little that was accurate and they knew very little of the physiology of muscle and the effect of stretching, chilling, or overusing it.

The remedy of the defects described would

obviously be desirable and although this paper is concerned chiefly with the study of the defects, certain constructive suggestions may be offered. (1) Thoroughness and method in examination of patients should be taught by itself in a short course in any clinical department. Proper examination at present is much more insisted on in the departments of clinical medicine than elsewhere and the student should be taught that it is equally important in all branches. (2) The student should be taught to think out a case, to refer symptoms to pathological conditions, to base treatment on pathology, and to use his knowledge of anatomy and physiology in aiding in the solution of his problems. This is, perhaps, the most serious defect to remedy, for the teacher, in many instances, may not do this himself, and he cannot teach what he does not practise. Moreover, the students are too much hand fed and not trained to think and to reason out the individual case on fundamental grounds. If the student is to be taught to think, the teaching must be made more educational in the real sense, for education by its derivation means drawing out and not forcing in. In addition, the fact that memory is greatly strengthened by association does not seem to have been utilized in the medical curriculum to its proper value; and the student has been too much expected to memorize isolated rather than associated data. (3) Anatomy and to a certain extent physiology are either (a) incompletely taught or taught in such a way that the student does not remember his facts, or (b) discontinued too early in the course, or (c) forgotten, as we forget our Greek or Latin. It has been commented on abroad of late that the American surgeon compares unfavorably in anatomical knowledge with his British colleagues and certainly the American doctor as I have seen him in the last year does not know his anatomy as he should. In the matter of physiology there is little tendency to regard it as anything but an abstract branch and the application of physiological principles to everyday surgery is almost wholly an unknown art. This suggests a self-evident criticism of the teaching of physiology. Anatomy and physiology should be taught not as abstract sciences alone but their practical application given in the pre-clinical period and later emphasized and amplified in the period of clinical courses. This division seems necessary because the stu-

dent in the pre-clinical period is not sufficiently advanced to appreciate many of the more important applications, which to be made effective must be taught after some clinical instruction. This implies a definite and active correlation between preclinical and clinical departments.

(4) To bring into touch the different subjects, a better system of correlation must be devised and followed. Most medical schools consist of an aggregation of separate departments, each teaching its own subject in its own way and at its own time. Gaps are left in some places and repetition occurs in others. No proper correlation can be accomplished without actual central supervision on the part of the Dean or of a committee working under him. There is too much "state rights" and too little "Federal control." (5) There is in most schools a lack of central businesslike control of the clinical teaching, each department being left to conduct its own affairs. Without a knowledge of what is being taught in other departments, no effective correlation is possible. This difficulty can be largely remedied by having handed in to the Dean at the end of each month a short written synopsis of every clinical exercise given in the school during the period. The students are willing to do this and it is easy to secure volunteers from every class or section. These synopses should be mimeographed and sent monthly to the head of every department in the school. This is not only necessary for proper correlation but is a check on the efficiency and faithfulness of the junior teachers.

These criticisms are offered in all modesty by a teacher of orthopedic surgery, but the ground covered was general and the criticisms deal with general methods and standards. We must bear in mind that the object of the medical school is to make good and efficient doctors; and no matter how good or elaborate the medical curriculum may be, if it fails in furnishing such good and efficient doctors it needs revision and improvement.

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PNEUMONIA AND EMPYEMA.

BY FIRST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

(Continued from page 391.)

29. *Purulent Peritonitis.* There was only one case, 11,448, and he had pus in no other serous cavity. He had a type I lobar pneumonia of the R U L and R L L, had jaundice, developed right pleurisy only on the *thirteenth* day of the disease, and died on the eighteenth day. Obduction showed consolidation not only of the R U L and R L L, but also of the L U L, with no fluid in the right pleura, 1100 cc. not purulent in the left, 70 cc. not purulent in the pericardium, but 300 cc. thin greenish pus in the peritoneal cavity.

30. *Diagnosis of Effusion* has been difficult and many explanatory taps have been made in vain.

a. We have felt, like Cole, "that it is probably of great importance to detect . . . small amounts . . . and . . . as early . . . as possible." The chest has therefore often been needled on only slightly suspicious signs in the patient's condition, even without definite physical or x-ray signs of fluid.

b. We have too often been content to use one of the smaller three (of the four) needles supplied with the Potain aspirator. Nothing smaller than a 14 G, B & S, should be used. Even that has several times let out surprisingly small amounts; and in these cases the medical side has felt the inadequacy of aspiration as a method of drainage.

c. So many cases show no effusion that at times the search lags. Floyd has commented ("Pleurisy," *Journal Medical Research*, 1914-15, xxvi, 261) on the infrequency of effusion in comparison with the frequency of pleural inflammation: "Following lobar pneumonia the pleura is practically always involved . . . yet in Musser's series of 127 autopsies in pneumonia, only 4% showed serous effusion, and 16% purulent." Of our 241 cases, 2% had serous effusion and 22% pus.

31. *The Character of the Fluid* here, as in other army camps the past winter, has been remarkable for its thin turbidity rather than the more familiar pus of civil life. The surgeons still prefer to delay operation till the effusion becomes large, purulent, or marked by free bacteriologic growth. The medical service, on the

other hand, is inclined to feel that thin exudate is often graver than thick, just as with middle ears, and that, therefore, with any growth, the effusion though small and merely turbid, is a potential empyema and should be drained by incision.

Where there has been a positive culture (or in one case, where the fluid was markedly purulent and the patient prostrated like the typical civil empyema), the case has been considered an "empyema." Serofibrinous fluid with negative culture has not been considered an empyema. This obviously arbitrary classification is easy to attack, but the answer is made that any classification will be open to objection until closer study of fluids (by the cell counts, differentials, cultures, and outcome), shall have indicated how far the criterion of a suppurative pleurisy should be *growth* or how far it should be *pus* (though sterile). Our feeling is that "empyema" must continue to be used to indicate the "severe symptom" (Cole), the complication to be watched for; and that, therefore, its presence should be diagnosed, not on the basis of sterile pus (which can hardly be thought grave), but on the basis of a positive culture (which, as our figures show, must be always considered with anxiety).

32. *Serofibrinous Pleurisy with a negative culture* was present in only 17 cases, i.e., 6%, of the 485 pneumonias. These were referred to the Tuberculosis Specialist, but none was diagnosed by him as tuberculosis. These cases were included in the series of empyemas. Total fluid removed from each patient was 3400, 2950, 1050, 900, 850, 650, 600, 240, 226, 100, 70, 60, 30, 6, 5, 3, and 1 cc., respectively.

33. *Empyemas with Negative Culture on First Tap.*

a. Nine of the seventy-seven empyemas gave sterile fluids on the first exploratory and showed a positive culture only later, i.e., in 12%.

b. Yet the volume in these nine taps was as high as 600 cc., and averaged 277 cc.

c. The positive culture was obtained from the second to the sixteenth day after the sterile tap; average, 10 days.

d. The volume of the fluid with growth was in a third of the cases 5 cc. or less, and averaged 442 cc.

34. *Rapid Onset of Empyema* was noted most strikingly in Reg. No. 4794, who died on the third day of his pneumonia and on the

table was found to have an undiagnosed left pyothorax of 2700 cc. The following had positive cultures on either the third or fourth day of their pneumonias:

12,058	1050 c.c.	PK + ST
7,897	800 c.c.	ST
7,952	700 c.c.	PK + ST
9,142	500 c.c.	ST
11,392	400 c.c.	ST
12,284	200 c.c.	ST
5,193	80 c.c.	ST
9,317	60 c.c.	PK
11,600	20 c.c.	ST
3,623	1 c.c.	ST

The following had positive cultures on either the second or first day of their pneumonias:

4,406	700 c.c.	ST
7,235	500 c.c.	ST
7,304	5 c.c.	ST

These cases confirm the experience known to others, but unknown to too many, that effusion must be anticipated even *before* the crisis. We have had, however, no record of any such rapidity, "within a few hours," as that "repeatedly remarked" by E. E. Irons and D. Marine, (*Jour. A.M.A.*, March 9, 1918, 70, p. 688). Nor did we have any such fulminating cases as those of Hamburger's ("Pneumonia and Empyema at Camp Zachary Taylor, Ky.," *Jour. A.M.A.*, March 30, 1918, 70, 915): "Many came into the receiving ward from the regiments with chests full of pus."

35. *Empyema Opposite Pneumonia.* Only one patient (Reg. No. 8546) developed empyema on the side opposite the pneumonic consolidation. The fluid obtained (10 cc.) showed pneumococcus culture. No op. done. Patient alive and improving.

36. *Primary Empyema, i.e., Pneumococcus Infection without Pneumonic Consolidation.* It will be noted that two cases of empyema without preceding consolidation have been included in this series of 485 pneumonias. This is done because of the view that the consolidation is a habitual episode in pneumococcus-septicemia rather than a local disease. In empyema we feel just as "in abortive pneumonia . . . we know, that a pneumococcemia may exist without (pulmonary) symptoms and also that the symptoms of pneumonia depend more on toxemia than upon the extent of pulmonary involvement." (Norris, p. 237.) Cole (*l.c.* 1149) cites a rather similar "apparent pulmonary infection with type IV . . . during convalescence from measles. There was a pleural exudation . . . but the signs of lobar pneumonia were never

definite." . . . Of these cases Hamburger says: "Many cases diagnosed clinically lobar pneumonia showed at necropsy no evidence of pneumonic consolidation, but contained large amounts (3 liters and more) of empyema pus and atelectatic lung tissue. Such cases may be considered *primary suppurative pleuritis*." He also quotes Joemann as earlier authority for this view. That some empyemas are "primary pleural infections" is also agreed by Babcock and by Lord. Similar, too, is Mallie's report (Mallie, H., "Pneumococcus Meningitis," *Journal de Médecine de Bordeaux*, March, 1918, 89, No. 3) of pneumococcus meningitis without lung consolidation, confirmed by necropsy. He cites still another case reported by Weill in 1915. Incidentally, this finding was so rare (1 in his 244 pneumonias), that like ours it might be thought by the more sceptical to be due simply to oversight of the lung involvement. However, our view has material support in the recent discovery by Colonel Gordon, (Gordon, M. H., *Jour. R.A.M.C.*, Jan. 1918, xxx 1-22) that meningococci can be divided into four types like pneumococci; and also the recent observations by Major Herrick, (Herrick, W. W., *Arch. Int. Med.*, April, 1918, xxi, 541) that meningitis, while a habitual episode in meningococcus septicaemia, was however, absent in 4% of his cases.

The sceptic will say that these instances of pneumococcus infection were localized primarily in the pleura only apparently, while in reality the preceding consolidation was missed. An answer to this is presented by the following remarkable cases in which effusion occurred a week before consolidation: Reg. No. 13535, Pvt. in Infantry, age 28, W, service: 6 months, born in Mass., was, on May 4, admitted to a surgical ward for an abscess of the neck, posterior, deep, acute, suppurative. T. 104—P. 120—R. not taken. It was incised and drained the same day. No ether. On May 8: "Drainage good but temperature continues high. Compl. pain, right lower chest." (Capt. M. A. Watkins, M.R.C.). The medical consultant (Major D. M. Hoyt, M.R.C.) diagnosed "Fluid, right base." X-Ray (Major E. L. Davis, M.R.C.) showed "coarse mottling, 4th rib to diaphragm. Diaphragm very high. Interpretation: Acute congestion, lower right chest."

On May 11 a second ray showed: "Shadow over entire rt. side, from first rib downward. Typical S-shaped shadow of pleurisy with effusion. Heart pushed to left. Coarse mottling

first i.s. on rt. No evidence of pneumonia. Interpretation: Pleurisy with effusion." On May 12th the internist (Major F. S. Churchill, M.R.C.) noted: "In lower half of rt. back, dullness merging into flatness at extreme base, with diminished T.F., voice sounds and resp. murmur." On May 13, the third radiograph still showed no evidence of pneumonia. "Shadow from third rib to diaphragm. Interpretation: Pleurisy with effusion, rt." On May 14, the first tap gave 800 c.c. fluid, but the smear and culture were negative. Later in the day the clinician (Major Hoyt) diagnosed: "Pneumonia R.L.L. and some fluid." On May 18, the second tap yielded 250 cc. turbid fluid, smear and culture neg. On May 20: "Consolidation of R. L. L.; considerable temp.: 102.2—100—22, but not very sick." (Capt. J. W. Moore, M.R.C.) On this day, for the first time, the X-Ray showed consolidation: "Haziness from clavicle to third rib. Dense shadow from second rib at periphery, extending to third rib midline to diaphragm rt. From fourth to diaphragm shadow much denser, rt. Heart pushed to left, but not especially enlarged. Interpretation: Pleurisy with effusion, rt. lobar pneu. rt. lower lobe." On May 23, about the same temp, 103—104—28, and same physical signs. On June 5th, temp. was normal, 98.6—100—24, but the signs were persisting.

(To be continued.)

Book Review.

The Canadian Medical Weekly. Hamilton, May 27-June 1, 1918. Published under the auspices of THE ONTARIO MEDICAL ASSOCIATION. Toronto: The Macmillan Company of Canada, 1918.

This volume is a collection of papers and discussions submitted at the recent medical congress in Hamilton, Canada. Nine sections are represented as follows: Eye, ear, nose and throat; medicine; obstetrics and gynaecology; pediatrics; public health; the returned soldier problem; surgery; tuberculosis, and the museum laboratory. The papers are dedicated to the great war and deal with the alleviation of suffering with this purpose in mind. The authors are representatives from the large clinics of both Canada and the United States.

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SMALLPOX VACCINATION.

In a previous issue of the JOURNAL, there has been published material relative to the annual anti-vaccination agitation. In this connection, a circular letter and pamphlet recently issued by the Health Department of Boston is of interest to the profession. The letter states that four cases of smallpox have lately been discovered in Boston, the patients all members of a crew of a fishing boat. As a considerable number of exposures occurred before the presence of the disease in Boston was known, it is the hope of the Health Department that the community will avoid the spread of the disease by general vaccination. The purpose of this letter is to warn the profession of the presence of smallpox and to solicit coöperation in the promotion of vaccination throughout the community.

The pamphlet accompanying the letter is an interesting exposition of vaccination in its re-

lation to smallpox, by Dr. Jay F. Schamberg, and is one of a series prepared by the Council on Health and Public Instruction of the American Medical Association. It describes the prevalence and virulence of smallpox in England before the introduction of vaccination, in 1798, by Dr. Edward Jenner. In London, during the eighteenth century, smallpox caused one-twelfth of all deaths, and it was felt that everyone would have to pass through an attack at some period of his life. In this pamphlet, the sources of smallpox infection, its symptoms, and various stages of the disease are described; it has been circulated among members of the profession in order to arouse them to the danger from smallpox, which has been discovered in the community.

INFLUENZA AND VENTILATION.

A RECENT issue of *The British Medical Journal* mentions the importance of air conditions in matters of health, and suggests deep breathing, exercise, and sleeping in the open air as important measures in combating the infection of influenza. The following comments are applicable to the American as well as to the British public:

"Although man has lived in houses of one kind or another for several thousand years, and in western Europe since the introduction, somewhere in the fifteenth century, of glass for domestic windows, in houses which can be almost hermetically sealed, yet a human strain capable of withstanding the evil influences of unventilated rooms has not so far been evolved. Our ancestors of a few centuries ago immured themselves in tightly-closed houses, slept in bedrooms with windows closed, sometimes even in eupboards or box beds with shut doors. The result was reflected in their mortality, in the prevalence of the plague and other diseases, and in their short average span of life. Though we are wiser than they, and pay lip service to the virtues of fresh air, and talk much and learnedly on ventilation, the severity of the present pandemic of influenza is enough to show that we need to grow wiser."

ST. BARTHOLOMEW'S HOSPITAL.

The history of St. Bartholomew's Hospital is interesting to the profession because of its reflection of early medical progress in England. The hospital was founded in 1123, when

materials were scarce and the universities had not yet been established. The *History of St. Bartholomew's Hospital*,* by Dr. Norman Moore, describes the medical knowledge of those times. During the early history of St. Bartholomew's, the only medical book available was the fourth book of the *Liber Etymologicarum* of St. Isidore of Seville. As this covers only a narrow range of subjects, it is probable that physicians of that day acquired the greater part of their medical knowledge from bedside observation. Within two centuries, however, more medical literature was available; for John Mirfield, probably the first physician of St. Bartholomew's Hospital, and the author of his *Breviarium Bartholomei*, was familiar with Gordon's *Lily of Medicine*, Gaddesden's *Rosa Anglica*, and the *Compendium* of Gilbertus Anglicus. For four hundred years the hospital maintained its character as a religious house, with an annex devoted to the exhibition of charity for the poor; not until 1535 did the hospital become prominent as a place for the treatment of people who were suffering from illness.

* Reviewed in a recent issue of the *British Medical Journal*.

CANDIDACY OF DR. BRADFORD FOR OVERSEER.

ALL physicians who are also Harvard graduates should be actively interested in the candidacy of Dr. Edward Hickling Bradford for Overseer of Harvard College. Upon the expiration this year of Dr. George B. Shattuck's term of office, the Board of Overseers will be left without a representative of our profession, unless another of its members is elected. Dr. Bradford is peculiarly well qualified in both personality and experience to promote the welfare of the Medical and Dental Schools in this position, and it is particularly desirable in their interests as well as from individual loyalty that graduates of those schools who are qualified to vote should ensure Dr. Bradford's nomination and election.

MEDICAL NOTES.

TRIBUNAL FOR MEDICO-LEGAL QUESTIONS.—Dr. Avendaño, professor of forensic medicine at the University of Lima, is reported to have

expressed the belief that a tribunal for the adjudication of medico-legal questions was established in 1570 by a decree of Philip II, and continued in exercise until 1851. Burial and embalming were its primary interest in the sixteenth century; in the seventeenth, cases of sudden death were investigated; and Caesarean section post mortem was carried out in the eighteenth. A special institute was founded with a toxicological laboratory and a post-mortem room in the nineteenth century. The Government, the police, and the medical faculty constituted the combined authority of the institution. Dr. Avendaño advocates the establishment of a medical and juridical institute, which should be equipped with a staff of chemists, psychiatrists, and jurists supplied by the faculty of law.

INFLUENZA IN THE BRAZILIAN ARMY.—A recent report from Rio Janeiro states that influenza exists in epidemic form in the Brazilian army, and that there are three hundred cases in the Rio Janeiro military hospital alone.

APPOINTMENT OF DIRECTOR OF CLINICS, MASS. STATE DEPT. OF HEALTH.—Dr. Hugh Cabot of Boston has been appointed Director of Clinics in the Subdivision of Venereal Diseases of the Massachusetts State Department of Health.

His efforts will be toward the standardization of work in the sixteen state approved venereal clinics and toward familiarizing the physicians of the State with the opportunities for expert treatment and advice to be found in them.

COURSE IN PUBLIC HEALTH ADMINISTRATION.—A practical training course in public health administration will be conducted in New York City during the coming spring by the New York Academy of Medicine and the New York Bureau of Municipal Research. The contemplated course is planned to cover a period of six weeks, beginning April 30, 1919. During the first three weeks of the course, public health experts of national reputation will conduct lectures and conferences; the last three weeks will be devoted to field study and observation of health work and institutions in and about New York City. Persons who enroll for the course must give assurance of attendance for at least the first three weeks.

The purpose of this training course is to

make it possible for health executives, by coming in contact with the leaders of public health thought and action in the United States, to acquire new ideas for use in their own work. The administrative rather than the technical medical side of public health work will be emphasized. The course is outlined in the Public Health Report for March 7, 1919.

MEDICAL STRIKE IN GERMANY.—It has been reported recently that in Leipzig and in other towns in Germany there has been a "strike" among the doctors, chemists, teachers, and journalists as a protest against the workmen's strikes. It is reported also that there is a severe epidemic of smallpox in Germany at the present time, which, in view of the fact that medical attendance is unobtainable, is presenting serious difficulties.

BRITISH MEDICAL SERVICE IN THE WAR.—*The British Medical Journal* has published recently figures which show the increase in the British R.A.M.C. between 1914 and 1918.

August, 1914.

Regular: Officers, 1,279; Other ranks, 3,811.

T. F. and T.: Officers, 1,889; Other ranks, 12,520.

Totals: Officers, 3,168; Other ranks, 16,331.

October, 1918.

Regular: Officers, 10,289; Other ranks, 102,312.

T. F. and T.: Officers, 2,863; Other ranks, 30,605.

Totals: Officers, 13,152; Other ranks, 132,917.

The officers enumerated in 1918 included 820 dental surgeons.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending March 22, 1919, the number of deaths reported was 228 against 280 last year, with a rate of 14.93 against 18.61 last year. There were 36 deaths under one year of age against 36 last year.

The number of cases of principal reportable diseases were: Diphtheria, 49; scarlet fever, 63; measles, 12; whooping cough, 11; tuberculosis, 67.

Included in the above were the following cases of non-residents: Diphtheria, 5; scarlet fever, 7; tuberculosis, 11.

Total deaths from these diseases were: Diphtheria, 5; scarlet fever, 1; whooping cough, 1; tuberculosis, 23.

Included in the above were the following non-residents: Diphtheria, 1; tuberculosis, 2.

RETURN OF MEMBERS OF HOSPITAL UNITS.

The enlisted personnel of the Massachusetts General and the Boston City Hospital Units returned to New York on March 24. The former served at Base Hospital No. 6, near Bordeaux; the latter at Base Hospital 7 at Joules-Tours. Lieutenant-Colonel John J. Dowling of the Boston City Hospital Unit did not return with the Unit; he and 15 other officers left St. Nazaire, France, on the *Tivives*, which will return by a circuitous route and did not arrive until March 29. The City Hospital Unit came home in command of Lieutenant Harry S. Peacock of Boston, the dental surgeon of the Unit. The Massachusetts General Hospital Unit returned under command of Lieutenant-Colonel Lincoln Davis of Boston. Colonel Frederic A. Washburn, who went over with the Unit early in the war, was on duty in England, where he had been for some time directing the work of several American hospitals.

Among the officers of the Massachusetts General Hospital Unit No. 6 who returned on the *Antigone* were: Lieutenant-Colonel Lincoln Davis, Captain George A. Leland, Lieutenant Douglass Bassett, Lieutenant Charles S. Glasgow, and Lieutenant Edward O. Roundy.

Among those of the Boston City Hospital Unit to return were: Lieutenant Harold L. Peacock, Lieutenant James J. Putnam, Lieutenant Fletcher H. Colby, Lieutenant Richard L. Ahearn, and Lieutenant Richard D. Peters.

LECTURES ON PREVENTIVE MEDICINE AND HYGIENE.—The Cutter Lectures on Preventive Medicine and Hygiene, by Harry E. Mock, M.D., Lieutenant-Colonel, M.C., U.S.A., Division of Reconstruction of Disabled Soldiers, on "Industrial Medicine Considered from an Economic Standpoint" and "Reclaiming the Disabled," were held on March 17, 1919, at the Harvard Medical School.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press.

HEALTH EDUCATION IN FRAMINGHAM.—The Community Health and Tuberculosis Demonstration of Framingham has conducted educational work with two primary aims: (1) for

the instruction of the people of Framingham regarding the methods and objects of the Health Demonstration; (2) to educate all groups regarding hygienic practices and practical measures of disease prevention. Measures have been taken for the prevention of infection, for increasing personal hygienic measures, for the suppression of disease, and for the promotion of increased resistance to disease. In carrying out this program, leaflets, placards, displays, health exhibits, and literature for distribution in schools, factories, and baby clinics have been utilized. Local newspapers have coöperated by contributing space for the publication of health letters. A recent issue of the Bulletin of the National Tuberculosis Association contains a list of 62 subjects which have been discussed for the benefit of the community.

WESSON MATERNITY HOSPITAL.—The Wesson Maternity Hospital in Springfield, Mass., has not appeared in the columns of the JOURNAL since the notice of the dedication in December, 1908. No printed notes have been made except the notices of the annual meetings of the corporation and of the trustees in the local papers. The progress and success of this hospital is interesting because as a public institution it is unusual. Mr. D. B. Wesson built and equipped the hospital and provided an endowment of \$200,000 by his will. The hospital has never had any other money contribution and is maintained entirely by the payments by patients and the endowment income.

Under the trustees the management is by a finance committee (*n.b., not doctors*) and by a board of managers of three physicians from each of the two schools of medicine. This board is the same as at the beginning except for two deaths. There is no medical staff of any sort, each patient employs her physician as in her home. The hospital furnishes accommodations according to the requirements of the patient. Most of the rooms have baths and some of them balconies. The nursing service is the same for all except when patients bring in an individual nurse from outside. The wards are of eight, four, and two beds. The charge per week is from \$17 to \$45. Any physician can have a case admitted free by vouch-

ing for her as deserving, and agreeing to attend her gratuitously.

An adequate number of skilled head nurses is maintained for day and night service. The pupil nurses come from other hospitals and are required to have had 18 months training. They come for four months in maternity work and class instruction, and passing a written examination receive the diploma, and the time is allowed by their hospitals.

At present there are 17 from the Massachusetts General, 9 from the Springfield, and 4 from the Memorial hospitals. Diplomas have been given to 700.

The superintendent, who was already well known in hospital management when she assumed the details of the hospital organization and of the training school, is still in charge. The patronage is from all classes in the community, and a large anxiety of the management is to provide for all who apply. Every available space in the hospital building has been converted for patients' use, even to screened beds in the corridors, and still cases are refused because there is no place to put them. The uncertainty of dates is a very troublesome problem. Two dwelling houses opposite the hospital grounds have been purchased in order to provide rooms for additional nurses and for domestic servants.

During the first few years the number of patients was within the capacity, but there has been a rapid increase in the succeeding years—1918 being the record, with 1,047 cases, more than one-fourth of the number recorded in the city for the year. The Wesson Maternity has been popular with the physicians from the start, and that it is appreciated by the public is shown by the hundreds of patients who return for subsequent confinements. The records show a large re-entry list for the second and third, and many for the fourth and fifth, and several for the sixth time. Lately the record reached case No. 7,000 which, with almost an equal number of babies, indicates the amount of the work.

The value of hospital care in maternity is well recognized in Springfield and the general hospitals all provide for such cases, the Catholic Mercy Hospital having a special building and a large patronage.

NEW ENGLAND NOTES.

CONNECTICUT HOSPITAL FOR THE INSANE.—

The report of the Connecticut Hospital for the Insane for the past two years offers a complete summary of the purposes of the institution and the work which has been accomplished. The hospital has been obliged to face the trials which have been common to the whole country; unprecedented rise in the cost of necessary supplies has presented economic problems, and the shortage of physicians has made it difficult to maintain adequate ward service. From October 1, 1916, to September 30, 1918, there has been a daily average of 2,615.8 patients in the institution; 1,216 of these men and women have been regularly employed at some form of occupational training. No out-door work is assigned to patients except under medical direction; the form and duration of occupation, together with the patient's reaction to it, are regarded as distinctly medical matters. In re-educational classes, kindergarten methods, primary school work, simple art work, and calisthenics have stimulated the interest of patients and awakened initiative. A sewing class for about 20 patients has been formed and some productive work has been accomplished. For the more demented patients among the women, a class has been formed where work is done in picking apart curled hair for mattresses, and in tearing and sewing rags for rugs. Male patients are occupied chiefly by cement work and the manufacture of brushes and brooms. There are eight special occupational classes with nine teachers and an average of two hundred patients receiving training. Recreation is provided for the patients in the form of weekly dances and moving pictures.

The group of dementia praecox constituted the largest number of first admissions, senile psychoses the second, alcoholic psychoses the third, and manie-depressive psychoses the fourth largest groups. The work of the laboratory, which has been developed to a high standard of practical and research efficiency, deserves especial emphasis. In addition to the general hygiene measures, such as the analysis of water and milk, the laboratory has made and assisted in the administration of typhoid and paratyphoid A. and B. vaccine for about 3,100 patients, and has made 1,027 tests of blood serum. During the biennium, 177 autopsies were performed, and microscopic

preparations of the brain and internal organs of each case have been made. Research work has been carried on with acetic anhydrid sulphuric acid. The number and condition of patients, and causes of deaths are recorded in statistical tables in the report.

MAINE COMMISSION FOR THE FEEBLE-MINDED.

—The problems involved in the care, treatment, and ultimate elimination of the feeble-minded are becoming more fully appreciated and investigated. In 1917, the Legislature of Maine appointed a commission to make a thorough study of the conditions within that State. The report of the Maine Commission for the Feeble-minded, assisted by the National Committee for Mental Hygiene, has been published recently.

The survey was limited to an investigation of the mentally deficient. One hundred and sixty-two cases were intensively studied and case records made. Returns were obtained from 164 cities, townships and plantations, and 121 institutions, including almshouses and jails. Estimates of the numbers of the feeble-minded in these institutions were secured from local observers of unusual intelligence, experience, and opportunity for observation. Twelve rooms of public school children and four special groups were given congregate intelligence tests, and three degenerate communities were several times visited in the process of collecting data. The intelligence tests used in the schoolrooms were those of Captain Lyman F. Wells, psychologist of McLean Hospital, Waverley, Massachusetts. The tests used in individual personality examinations were: (1) psychiatric tests adapted to the determination of the absence or presence and the varieties of mental diseases, (2) searches in the field of intelligence by means of the standard "Termin Tests," enabling a numerical evaluation in terms of intelligence quotient and intelligence age level, supplemented or substituted in the case of adults by unstandardized tests which have been found of value in classifying mentalities of adults, and (3) searches in the field of character by the inductive method: since tests in this field, like those in the field of mental diseases, are not yet susceptible of numerical scoring.

The Commission found that the low-grade feeble-minded group was lacking in all the higher, later developed attributes, such as filial

regard, patriotism, altruism, courage, judgment, initiative, foresight, and responsibility. Members of the high-grade feeble-minded group are not obviously feeble-minded. With this class it is more difficult to deal, inasmuch as their better mental equipment enables their greater activity and at the same time enables them to conceal with partial success their mode of life when it is discreditable. Members of both these groups present a great variety and diversity of mental peculiarity and equipment. The cost to the State in 1917 was \$87,683, much of which was probably due to the uncontrolled activities of the high-grade feeble-minded.

There were found in Maine 1,659, or 2.12 per thousand of population, feeble-minded; it is probable that the higher grade cases of mental defect constitute on the whole a far greater sociologic and economic menace. The number of Maine men rejected for military service because of mental deficiency was 667, and six states have less creditable records than Maine in this respect.

The report of the Commission contains tabulated records of intelligence age level, the age and distribution of the feeble-minded in the State, their earning capacity, and marital condition. Case histories of feeble-minded individuals and families are cited. The recommendations of the Commission emphasize the necessity of formulating definite plans for diminishing feeble-mindedness. Among the more immediate needs are mentioned: education of the public on the problems of feeble-mindedness, the extension of mental clinics, provision for the enactment of a suitable commitment law, increase in the capacity of State institutions for the care of feeble-minded, more intensive teaching of psychiatry in the State medical schools, and the extension of medical inspection in public schools. The report of the Maine Commission for the Feeble-minded reveals conditions which show the importance and necessity of thoroughly investigating and attempting to solve the problems involved in the care of the feeble-minded.

BUTLER HOSPITAL.—The seventy-fifth annual report of the Butler Hospital, Providence, R. I., records the activities of this institution during the year 1918. At the beginning of the year, there were one hundred and forty-three patients in the hospital: there have been ad-

mitted twenty-nine new cases, and one hundred and twelve have been discharged. The State has cooperated with the hospital by giving aid to seventy-four persons. Butler Hospital granted one hundred and twelve beneficiaries during the year for the relief of sickness and sorrow.

Butler Hospital is primarily intended for the acute and curable forms of nervous and mental disease, although it has been neither possible nor practicable to exclude all chronic psychoses. Eighteen per cent. of the admissions have been dementia praecox patients. The number of admissions has necessarily been below normal, because of a lack of men in the hospital service.

Fourteen nurses were graduated from the training school in 1918. Thirty-one new men were employed during the year in the male nursing service, although most of them remained only for short periods. The hospital did not escape the epidemic of influenza, though the disease was limited almost entirely to employees and nurses. The service rendered to the hospital and its patients by the members of the staff has been loyal and untiring, in spite of the difficult conditions with which the various departments were at times confronted.

Obituary.

ELTON JAMES BASSETT, M.D.

ELTON JAMES BASSETT, M.D., a retired Fellow of The Massachusetts Medical Society, died at his home in Taunton, March 16, 1919, at the age of 74. The son of James Taylor Bassett and Caroline E. Jones, he was born in Taunton February 5, 1845. He was educated at the Taunton High School and at the Lawrence Scientific School at Cambridge. His medical degree was taken at Harvard in 1869, when he joined The Massachusetts Medical Society and settled in practice in his native city. There he attended to a large practice until two years ago, when failing health caused his retirement. He was a member of the Charles H. Titus Lodge A. F. and A. M. His widow survives him.

Miscellany.**THE ADMINISTRATION OF THE INSTITUTIONS FOR THE CARE OF THE INSANE, EPILEPTIC, AND FEEBLE-MINDED IN MASSACHUSETTS. PROPOSED LEGISLATION A BACKWARD STEP.**

ON February 20th. 1919, the Supervisor of Administration submitted to the Legislature a plan for the establishment of a Department of Public Institutions. This measure abolishes the Commission on Mental Diseases, the Bureau of Prisons, the Board of Parole, and the authority of the State Board of Charity so far as it relates to institutions. It also abolishes the existing Boards of Trustees as such, and provides for their continuation as a Board of Visitors only. The government of the department is to be vested in a Board of Control of nine members, one of whom is to be a director and chairman. The director is to act as the executive officer only; while the Board is to make appointments, fix salaries, make rules and regulations, and determine matters of general policy. It would have authority to appoint and remove all its officers and employees and the principle officers of the institutions. This arrangement would render the Director practically powerless.

The administration of the institution for the insane, epileptic, and the feeble-minded, would mean the inauguration of a system in Massachusetts which has not proved to be satisfactory in any other State with a similar number of institutions. There are now Boards of Control in eleven States, as follows: Arkansas, Iowa, Kentucky, Minnesota, North Dakota, Oregon, Tennessee, Vermont, Washington, West Virginia, and Wisconsin. Col. Thomas W. Salmon, Medical Director of the National Committee for Mental Hygiene, New York City, after a careful study of the administration of the institutions in this country under boards of control, made a report on this subject, which reads, in part, as follows: "Under boards of control, politics influence the care of the sick to a degree unknown under different types of supervision, and the scientific and humane aspects of the work undertaken are generally subordinated to doubtful administrative advantages. With hardly an exception, these boards of control

have not endeavored to secure better commitment laws, to lead public sentiment so that higher standards of treatment will be demanded, or to deal with the great problems of mental disease in any except their narrowest institutional aspects. * * * It is an essential part of the policy which places the care of the insane under this form of administration, that there shall be 'no division of responsibility;' and, seemingly, there is no place in such a scheme for bodies which are as much interested in the personal welfare of these wards of the State as they are in governmental 'efficiency,' and which, moreover, are directly accountable to their neighbors—the friends and relatives of the patients." . . . "It is interesting to compare some of the conditions mentioned with those existing in states in which the care of the insane is intrusted to boards created for that special purpose. In these states—California, Maryland, Massachusetts, and New York,—it can be said truly that the care of the insane reaches its highest level."

The administration of all state institutions by a Board of Control may be necessary and advisable in states where the total institution population amounts to only one-half or one-third of that of the hospitals for the insane in Massachusetts. Boards of Control were originally established in states where the number of institutions did not warrant a separate department for the insane. To establish an administration of this kind in Massachusetts is to revert to the method of control existing in 1879, when the Board of Health, Lunacy, and Charity was created. It was soon found that this was too large a proposition for one board, and a separate Board of Health was established in 1888. It was only a short time until it was found that the insane and charitable institutions constituted too large a field for one board, and a separate State Board of Insanity was established in 1898.

To combine the charitable institutions, the hospitals for the insane, the feeble-minded, and the epileptic, and the prisons, in one group at this time, means a backward step of forty years: This should not be possible in Massachusetts. It would mean an inevitable lowering of standards in the care of the mentally diseased. Massachusetts has been held a model, as having one of the best systems of caring for the insane in the United States. To submerge the Hospital Department in an institution group which is to

include the Charitable and Penal Institutions, is to reduce the high standards established in the hospitals for mental diseases to the level of custodial institutions caring for paupers and convicts.

ALBERT EVANS,

Secretary Massachusetts Hospital Trustees Association.

Correspondence.

LETHARGIC ENCEPHALITIS.

State Department of Health, Boston.

March 17, 1919.

Mr. Editor:

Articles have appeared in the United States Public Health Service Weekly Report of February 21st, and in medical journals as well as newspapers dealing with "Lethargic Encephalitis" or a condition popularly known as "sleeping sickness."

With all conditions obscure in etiology and diagnosis there will be many cases reported which will simulate a much advertised or "popularized" disease but which, upon closer study, will prove to be an atypical form of some well recognized disease.

The Massachusetts Department of Health is anxious to make an epidemiological study of all illnesses simulating "Lethargic Encephalitis" and would appreciate it if physicians who have such cases, and who are willing to have them investigated, would notify the Department, Room 546 State House.

Thanking you for assisting us in calling this condition to the attention of the physicians of Massachusetts, I am

By direction of the Commissioner of Health,

Very truly yours,

B. W. CAREY, Epidemiologist.

EARLY HISTORY OF HARVARD MEDICAL SCHOOL.

Boston, March 19, 1919.

Mr. Editor:

I am interested in the history of the Medical School of Harvard College during the years 1810 to 1815, when the school occupied rooms over the Drug Store of Mr. William B. White at 49 Marlborough Street. At that time Marlborough street corresponded to what is now Washington street between Summer and School streets, and number 49 now corresponds to 396 Washington street, next to the store of McCullar, Williams, and Parker. The Boston Medical Library, and the Massachusetts Medical Society occupied rooms in the same building. Dr. Thomas Ives Parker also had an office there at the same time. A picture of the building at this time would be most valuable, but as this part of the street was widened in 1838, the old fronts were, of course, removed. The only pictures available were made after the alterations above mentioned. Any account of the interior arrangements of the building, the rooms used for teaching, and any data about the school at that time would be greatly appreciated. Such accounts are often found in old letters or family papers; and any facts, no matter how small or insignificant, will be of great help in working up the history of the school at this period. The writer would appreciate having any data sent to him at the Harvard Medical School, Longwood Avenue, Boston. With many thanks for inserting this letter in the JOURNAL, believe me,

Very truly yours,

JOHN WARREN.

CONTRIBUTION TO THE STUDY OF CANCER.

Sorel, P. Q., March 20, 1919.

Mr. Editor:

Should not the growth known as "cancer," the earliest apparent manifestation of the cancer disease, be considered the point of lowered resistance of the body, a point where nature brings together all her forces for defense, as she does in the case of trivial abscesses.

Do the facts not show clearly that the so-called "cancer" is but a "field cleared of all plants, where an unnatural fight is taking place, where nature appeals from the resistance elsewhere, where nature proliferates, where nature tries the recovery of vegetation after a loss?" (Sainte-Marie)

We generally acknowledge that cancer is subject to repeated irritations,—irritations which are the cause of *minor resistencia* everywhere and are followed by growth locally. We generally acknowledge that cancer is a proliferation of tissue cells forming a growth,—a growth, the effect of proliferation or an act of nature's defense, the concentration of energies brought from the body elsewhere,—detrimental to it—for the recovery of that part.

Are there any symptoms accompanying cancers generally that strengthen this theory? We are inclined to answer in the affirmative. In the first place, lack of resistance is a condition accompanying old age and not youth. This we know. Cancer also is a condition of old age, i.e., of those who have lost their resistance.

Second, atony of the arteries is very common in cancerous conditions, a fact that can be controlled *de visu* very often as in the case of (1) red streaks in some parts of the body, but more commonly on the nose, the cheeks, the dorsal surface of the hands; (2) a streptococcal poisoning appearance of the vessels of the fauces and of the pillars; and (3) according to recent investigations, the alveolitis dentalis or pyorrhea alveolaris, the disease *par excellence* of diseases of *minor resistencia*.

Third, the lack of resistance is apparent again in defects of metabolism, noticed in many cases of cancer. Many patients appear at clinics auto-intoxicated. A great number have not masticated their food for years past, have not salivated it, have eaten too fast, have drunk before mixing their food with their saliva. have smoked too intensively, and have eaten without any discrimination, at any time, many or all kinds of foods. It is no wonder that these things decrease resistance, both physiologically and pathologically.

Are not all these facts corroborating the assertion that possibly the origin of cancer may be in a concentration of nature's defense, in a focus of *minor resistencia* determined by auto-intoxication or intoxication of some kind.

If this is the case, there should be medical treatment of cancer so as to increase the powers of human resistance (gums, iodine, ichthyol appropriated for assimilation; agents of reconstruction, as possibly arsenical preparations with astringents) and there should be a hygienic method of treatment directed toward proper drinking and eating.

PHILIPPE SAINTE-MARIE, M.D.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting of the Suffolk District Medical Society will be held April 30, 8.15 P.M., at the Boston Medical Library, 8 The Fenway.

Speakers:

Dr. David L. Edsall, "Some Relations of the Practitioner to Industrial Medicine."

Dr. Cecil K. Drinker, "An Unusual Type of Metallic Poisoning."

J. BAIST BLAKE, M.D., President.
GEORGE R. MINOT, M.D., Secretary.

The Boston Medical and Surgical Journal

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Original Articles.

LEST WE FORGET. A STUDY OF HEALTH INSURANCE IN RELATION TO THE HISTORY OF THE TWO COUNTRIES WHERE IT HAS FOUND MOST FAVOR.

By ANDREW F. DOWNING, M.D., CAMBRIDGE, MASS.

THIS is the story of Veritas reviled by Vanitas, of Libertas and Aequalitas looted by Paternitas and Fraternitas. If in the judgment of my medical colleagues, it seems to be the fanciful flight of a flippant writer of fiction, it is because I am sketching from real life a drama of human tragedy and comedy which sustains the wisdom of that trite saying that truth is stranger than fiction. We moderns, having no thought of the past and no patience with the present, are attempting the impossible feat of living in the future. Careless of what was, or is, or ought to be, we are uncompromising architects of what shall be. To many of us, history, like our birth, "is but a sleep and a forgetting." Thus it is that the fancies, prejudices, and chicaneries of the specialists in poverty prevention roam at will in this happy hunting ground of the past, where the law is always off because it was never on. A specialist in fire prevention is not one who would annihilate the sun. An

expert in poverty prevention must not be one who would annihilate the past—or the poor.

The metabolism of fats and proteids in the human body is no more important to the medical profession than the metabolism in the larger body called human society of political, economic, social, and industrial pabulum or fodder. In either case, we are in the presence of processes in which mankind has a stupendous stake, for upon them depend the maintenance, improvement, and prolongation of healthy human life. Now healthy human life has a spiritual as well as a physical value. It is divine as well as human; it is quality as well as quantity: it is hope, not despair. Milton could write Paradise Lost only because it was possible to write Paradise Regained. That event in a stable of Bethlehem in Judea symbolizes healthy human life. The Magi followed a star in the heavens, but we, being wiser, follow the "shop early" signs which desecrate the street car and obscure the landscape. At any rate, it has not hurt big business to capitalize that historic event in Bethlehem. We acknowledge the birth of the babe but we forget that He grew to be a man.

Leaving the past for the present, I journey from hope to despair. The road leads from Veritas to Vanitas, from life that is divine and human, to life that has been profaned and de-

humanized; from Him who was sold for thirty pieces of silver to those who were bought for less. It leads to Berlin, where once upon a time there lived a man named Otto von Bismarck. During the last half of the nineteenth century, the history of Europe was in no small way the history of this statesman. As for the history of Germany, it was only a small part of the history of Bismarck, for Bismarck was bigger than Germany. The present war was lost on that eventful morning when a young emperor, doomed in his later years to be the unromantic figure of a king seeking an asylum in Holland, allowed his arrogance and jealousy to assert his right of imperial prerogative in the home of his powerful and popular Chancellor, only to be told by that irate aristocrat that "The commands of my king cease in my wife's drawing room." Here at least, Bismarck acknowledged his belief in the democracy which is founded upon the sanctity of the home. If it was the end of Bismarck, it was also the end of the empire which he created, for his successors were merely mannikins. It never occurred to the modern German statesman that Schleswig-Holstein and Alsace-Lorraine passed under the yoke of Germany only because Germany had first been compelled to pass under the yoke of Bismarck. The artist who painted the picture of the coronation at Versailles of the first Hohenzollern as German Emperor, artistically, even if unconsciously, made the Chancellor the incarnation of an artist's imagination. If under the caption of "Find the Emperor" a modern daily newspaper should run it as a puzzle, I venture to say that few would fail to guess the Chancellor as the Emperor. Indeed, he was the emperor, even if his attitude reminds one of a modern foot-ball coach on the side lines when a team in which he has no confidence makes a touchdown on the strategic merits of a play which originated in his sensorium. The failure of the Hohenzollerns in our day is an argument in favor of the head coach—or a strong line.

Bismarck was sincere in his belief that authority came from God. So far he was right, but unfortunately he was not schooled in the philosophy which would have enabled him to pursue his belief to its logical conclusion. This doctrine of the divine origin of authority must not be confused with the pernicious idea of the divine right of kings—a right based upon authority which is neither *de facto* divine, nor *de*

jure human. It is Vanitas reviling Veritas. Bismarck did not understand that civil authority is an expression of self-denial on the part of man due to his intelligent appreciation of the fact that he is naturally ordained for the society of his fellowmen. If the one or the several to whom is entrusted this totality of self-denial run amuck, endangering the public good and disregarding the divine law, the authority becomes tyrannical and ceases to bind in conscience. In other words, there is a moral authority higher than the state to which both the people and those vested with civil authority are equally responsible. Man's natural allegiance always has been, is, and always will be, to family, to religion, to friends, to truth, and to art. For the soul of man the state is merely "an historical or geographical accident," which will command his allegiance only if it enables him to realize these ideals. He surrenders only that minimum of freedom which will allow his hereditary or elected leaders to lubricate properly the intricate machinery of government in order that the economy of life may be carried on with some degree of decency and security.

All this is true in spite of the so-called separation of Church and State, an expression very much misunderstood. This separation is something *de jure*, not *de facto*. It does not mean the annihilation or subordination of the Church or the setting up of the Absolute State, "an idol that feeds on blood, in the heart and over the city." In proclaiming the inauguration of every governor of Massachusetts, the Secretary of State concludes with the solemn exhortation, "God save the Commonwealth of Massachusetts," and every proclamation of the Governor of Massachusetts is concluded with the same words. For many years there was a Secretary of State whose delivery of the inaugural proclamation was so impressive that the audience could not restrain a dignified smile when he finished the solemn climax of that sacred exhortation. It was as if he had said, "With such a weak mortal for an executive, may God help the Commonwealth of Massachusetts." The joke is not so much on the Governor as it is on the idea of the separation of Church and State. We cling half-heartedly to the "Divine," but we have interned as an alien enemy the "authority" wise enough to defend the spiritual rights of the people. The separation of Church and State, then, is in reality a dissection. In the presence of a plurality of re-

ligions and philosophies, the State, of course, must avoid embarrassment, but she cannot avoid the eternal verities, among which embarrassment has no place. Only Wisdom can interpret Veritas, and drive Vanitas from the Temple.

No one who understands this peculiar relation between Church and State will see in their constant conflict the sign of a decadent age, for the fight for righteousness is neither fanaticism nor bigotry. It is the sign of vigorous normal life, in a world whose salvation depends on the ultimate victory of right over wrong. Of course this perpetual conflict bores the citizen who, in the language of his set, is "disgustingly healthy," and who dismisses the most important topics of the day by wisely commenting, "It's all politics." It is politics, and politics is the *science* of government. It happens to be a *craft* because we have too many who are disgustingly ignorant. The atheist or the disciple of materialistic philosophy refuses to recognize the right of spiritual leaders to oppose civil authority. He interprets separation as annihilation. Now atheism and individualism may not be classified as religions, but inasmuch as their devotees believe in them with all the fervor of the most ardent Christian, we can truly say that they are cults or near religions (or far). Therefore if we have the separation of Church and State, why should we have the union of State and cults or philosophies, or whatever name you choose to distinguish them from Christianity, religion, Catholicism, or Protestantism, or whatever other term may excite the *furor paganus*. The problems which social legislation is trying to solve today are serious and exceedingly complex, because they concern the spiritual as well as the material welfare of millions of people. Hence no mere statistician, no individualist, no internationalist, no specialist in economics, can solve them. They are problems for the constructive statesman and the moralist. In opposing certain methods of social legislation, the authority of Christian philosophy is opposing the creation of the Absolute State, the State which acknowledges no higher authority; in supporting certain methods of social legislation, the vanity of materialistic philosophy is attempting to set up the Absolute State. You have your choice between living in a State which belongs to the people, or living among a people who are the property of the State.

I have taken this detour in order to show that no government can hope to last which de-

fies a higher spiritual authority. A democratic government, as well as a Junker government, will in the end travel from Socialism to extreme radicalism and anarchy. Its end is hell, with anarchy enthroned. All this was foreign to Bismarck's Prussian intellect. To him, like Hegel, the life of the State was the moral substance, and the souls of men, mere accidents. Obedience to authority, regardless of respect for it, was in his scheme the *sine qua non*. Although he was willing to acknowledge the heavenly origin of the State's authority, he was indifferent to the fallacious reasoning which concluded that hell typifies obedience to authority. In this belief, Bismarck was no exception. The world is full of people who are always giving someone else hell. I do not doubt the sincerity of our popular evangelists, but I do doubt the lasting benefit of a conversion due to a spiritual appeal which is based on the psychology of that meaningless phrase, "Give them hell!" Why not give the other fellow heaven once in a while? Every time you give a man hell before you have given him a chance, you are helping along the propaganda of anarchy, for it is a self-evident fact that the ranks of radicalism in government are recruited in large measure from those victims of despotic rule who never had a chance, or even felt the sympathy of a loyal spiritual leadership bold enough to challenge, even if not strong enough to check, tyrannical authority. Hell is the absolute negation of authority; it is the result of man's disobedience. Yet every devil was first given a square deal—a fact which is symbolic of Justice, and Justice is the handmaid of Wisdom. Bismarck, being only half right, was hopelessly wrong, when he founded a government on the illogical idea that the heavenly origin of its executive function mitigated the infernal origin of its legislative and judicial functions. Such is Kultur. It is something heavenly which can be made instantaneously more hellish. To get away with it, you must even bastardize logic.

Bismarck may have been a statesman; he surely was not a moralist. His successors may have been psychologists; they surely were not statesmen. But both he and they were alike in this—that they stood for a civil authority which could be challenged only in the drawing rooms of the wealthy, or in the boudoir of some common woman royally kept. Bismarck would be the last one to admit that his defiance of his king in his wife's drawing room could be inter-

preted as an admission on his part that he or any other Junker believed that the King's commands or theirs ceased in the kitchens of the women of the proletariat, who added dignity to their lives of drudgery by maintaining for their men and children a shrine worthy of the family *lares* and *penates*. In showing his teeth to the Kaiser, Bismarck was a family man asserting against an intruder the sanctity of his home. The Chancellor dissolved into the idea of the family. He did not refer to the drawing room as his own, and he might just as well have said, "The drawing room of the mother of my children." In order to keep his self-respect as a man, this Iron Chancellor, this creator of an empire and an emperor, was forced in the evening of life to assert the spiritual liberty of man in his tardy tribute to the savage sanctity upon which is founded the Holy Family of the New Testament. The Kaiser refused to vanish into the form of an intruder; he scorned the idea of the Holy Family; and he "fired" the Chancellor. Bismarck had dug his own grave and with him passed Germany's opportunity to retrieve a fatal mistake.

The external appearance of solidarity and power which Germany presented to the world only concealed the interstitial process which was raising insidiously the pressure of popular discontent and causing the accumulation of dangerous poisons in a body politic whose natural processes of enuresis, diaphoresis, and catharsis, had long been carried on by the vicarious functioning of transplanted organs. In 1870, radicalism having assumed the definite menacing form of Socialism, mustered half a million voters, and later won a dozen seats in the Reichstag. In attempting to suppress this now evident evil, Bismarck set in motion the old familiar policy of oppression and coercion so characteristic of the Foreign Office. In 1878, after two almost successful attempts to assassinate the aged Emperor, the harshness with which he pursued his domestic policy aroused such bitter resentment that the ranks of Socialism bore witness to the truth that oppression and persecution are the most worthless weapons of suppression. The Chancellor at once saw the folly of a domestic policy shaped by the technic of the Foreign Office, and he began to prepare a program of social legislation the purpose of which was to weaken the opposition to his autocratic scheme.

In 1881, Bismarck appeared before the Reich-

stag, as a Greek bearing gifts. These were accident insurance, sickness insurance, and old age pensions. Sickness insurance was passed in 1883; accident insurance, in 1884; and old age, or incapacity insurance, in 1889. Kindly observe that compulsory sickness insurance, the only form of social insurance which has aroused bitter and almost universal antagonism, was the first of the three schemes imposed upon modern Germany. In defending his program before the Reichstag, Bismarck said: "Give the workingman the right to employment as long as he has strength, assure him care when he is sick and maintenance when he is old. If you do that without fearing the sacrifice, or crying out 'State Socialism' as soon as the words, 'provision for old age' are uttered, . . . then, I believe, these gentlemen (*i.e.*, the Socialists) will sound their bird-call in vain; and as soon as the workmen see that the Government is deeply interested in their welfare, the flocking to them will cease."

Although these measures did not check the growth of Socialism, they did create a better attitude toward the Government on the part of the people. The younger generation, especially, were readily taught to look upon the Government as the kindly guardian of their interests. As the army grew in size and approached that acme of perfection which makes organization a wonderful, and at the same time a most terrible thing, the name of Germany became synonymous with all that is best and worst in militarism. Even the Socialist felt the thrill of an achievement the majesty and power of which transcended his wildest dream. The army was everything, for it could whip the world; and the very thought of it made the German pity other peoples for their weakness. To be an officer was to excite admiration at home; to be only a soldier was to excite jealousy abroad. If one German had to look up to another German, it was only that the lowest German might look down upon the most important individual of the proudest alien state. Among supermen, there could be no infra-men. It was the Utopia of Social Justice, founded upon the discovery that Justice, like coal tar, is a thing of many colors. Utopias are often the cemeteries of Wisdom—or the morgues of Social Wisdom.

It is true that Bismarck did not invent Social Insurance, but he did invent the compulsory aspect which makes sickness insurance so objectionable to this country. More than three and

a half centuries before the German Empire was created, Sir Thomas More, Lord High Chancellor of England in the reign of Henry VIII., suggested the idea of old age pensions in his *Utopia*; and later he went to the block because he refused to take the oath of supremacy in which the King was declared to be the supreme head of the Church. If More gave to social insurance a place in his *Utopia*, in which he boldly censured the vices of power, it is an argument in its favor only so far as social insurance does not advocate the doctrine that the minds and hearts of all the people, or a few, are the chatels of the State. Sir Thomas More did not give his life for any such idea of civil authority as underlies the compulsory insurance system of Germany. Germany did not give her people social insurance for any such noble purpose as underlay the heroism of Sir Thomas More.

With his social classes already created, Bismarck found the compulsory idea easy to execute. In this country, where no social classes exist, the idea of compulsion seeks sanctuary in the Constitution. Our social classes (a term very much misunderstood) are merely sociable beings drawn together in various groups by some common interest either serious or trivial. Each group is an enlarged family, less spiritually united perhaps than its model, but certainly no less free. Each is a family circle into which no one has a right to force an entrance. If Snub is refused a membership in Snob's club, the impartial judge will, as a rule, censure Snub and commend the decision of Snob and his associates. Being a bankrupt in self-respect, Snub knew no better than to "butt in," thereby compelling Snob to snub him. Even in his club, where he seeks relaxation from the freedom and the tyranny of his family, Snob finds himself obliged to defend the very freedom and tyranny from which he is a lonely fugitive. It is Snub, the sycophant, who is the real snob. Lost to dignity and self-respect, constantly snubbed for his offensiveness to others, always violating the privacy of families and family groups, he is the enemy of the supremacy of the family idea. It is he who keeps alive this mistaken notion of social classes. You can legislate a group of American citizens into a social class when you can legislate self-respect out of the individual, and thus make him indifferent to what a modern English writer calls "that finality of status which is the soul of slavery—and Compulsory Insurance." The Constitution, being a human

document, is neither inherently nor irresponsibly absolute. When it was written into the Constitution which the Lord gave to Moses upon Mount Sinai that man shalt not covet his neighbor's wife, there was no exemption made in favor of the future American who had the price to go to Reno, Nevada. That Reno thrived may or may not be due to something called constitutionality. Nevertheless Sinai is a more dangerous volcano than Vesuvius, and old Jakob Grimm, having lived before the era of Kultur, did not include the story of Herculaneum and Pompei in his *Fairy Tales*.

Although sickness insurance was passed in Germany prior to accident insurance and old age pensions, accident insurance has been the most popular member of the group in other countries; and in every case it has preceded any attempt to introduce sickness insurance. In the United States, within the past eleven years, industrial accident insurance has been accepted by many states, but only in a few, notably New York, Ohio, and Washington, has it been made compulsory. Sickness insurance, or as it is called in this country, health insurance, seems to be a hero to his admirers only when he comes as a bully swinging the club of compulsion,—a bully whom no one must be allowed to challenge. Specious argument endeavors to give him a place in the family circle of social and spiritual heroes. It is the pathos and the humor of hybrid philosophy which remind us that education and vaccination are compulsory,¹ and that, therefore, health insurance should enjoy an equal privilege or be crowned with a like diadem of tyranny. Now education is a wide subject which may be briefly defined as the systematic development through knowledge of the spiritual and material man. Compulsory education hardly penetrates the field of knowledge, for it accompanies the individual only through the brief years of childhood. It does not apply to unlettered immigrants who come here in late childhood and who often continue to live on in their dark world of spiritual and material ignorance, plastic pupils for the school of industrialism, in which compulsory efficiency trains the human clod to be an inexpensive and almost human cog in the expensive and coddled super-human machinery. It is a defense of childhood, of an innocence which once was ours; it is a protection of helpless childhood against enforced ignorance, against an enforced surrender of its spiritual, civil, and

natural rights and privileges, and against the wilful renunciation of the family idea which with us is ever predominant. It is as much a protest against the greed and neglect of commercialism as it is against the greed and neglect of those parents to whom the family is an industrial unit with a cash value. It creates no social class, and although it represents the profoundest social wisdom, no one thinks of referring to it as social justice. Moreover, civil authority, in exercising its prerogative in the matter of compulsory education, comes into conflict not so often with parental defiance as with the arrogance of compulsory ignorance, which is the autocrat of the industrial despotism of child-labor. But there is a further fact and a simple one, forgotten and obscured, because the Germanizing of America, especially in social philosophy, has converted many to the Continental idea that if the Government can tell men what they must not do, it can also tell them what they must do. With us, compulsory legislation has always connoted the Christian command, "Thou shalt not," issued to all the people and compelling their obedience. It is *right* challenging *wrong*. The compulsion connoted in "Thou shalt" is entirely foreign to us, because, as a rule, it means *wrong* challenging *right* in a command issued to the many or the few by the few or the many. The test of the wisdom and justice implied in the legislation of "Thou shalt," lies in the possibility of translating it into the Christian command of "Thou shalt not" and enforcing its obedience over all the people. Childish innocence is not protected by bludgeoning parental ignorance with the autocratic legislation of "Thou shalt," in order to kill the fundamental democratic and Christian idea of "Thou shalt not." Compulsory education sustains the Christian idea of "Thou shalt not."

Vaccination stands on its own feet, and its power represents the combined strength of the arms and the legs of the people. You have your choice between compulsory vaccination and compulsory smallpox, the germ of which is still a potential despot whose potential victims are not some, but all the sons of men. It is the medalion of superior intelligence, not the brand of social inferiority. It legislates into a finality of status, the germs of smallpox, not the hopes of men, and its monuments mark some of the most wonderful achievements of civilized man. In comparison with the numerical weakness and

unintelligent stubbornness of its opposition, the numerical strength and intelligent support of its defenders disprove the insinuation that this free gift and universal blessing is tainted with the legislation ideal of "Thou shalt." The eagerness with which the people of the present day seek the benefits of serum therapy exceeds by far the eagerness of the medical profession to enter into this therapeutic field called Serology. This is not intended to suggest the incompetence or backwardness of the general practitioner, but rather to assert my belief that the expert in serum therapy, in so far as he can prove his kinship with great men like Jenner and Pasteur, is the real aristocrat among specialists. Vaccination, having its origin in man's savage and blood-thirsty pursuit of knowledge, shares with education the gratitude and respect of all mankind. They do not have to swing the big stick of compulsion. They come to save man physically, not to destroy him spiritually.

Likewise the compulsion attached to the compensation acts of New York, Ohio, and Washington, created no social classes. The employer cannot but acknowledge his moral responsibility, if he allow his penury or carelessness to expose his employees to serious accident. One of the functions of the compensation act is the elimination, as far as is humanly possibly, of the chance of accident. In any well-governed community, Dives as well as Pauper is compelled by law to neutralize the danger of his icy sidewalk in order that no wayfarer may have to risk his bones. Everyone enjoys the same privilege, or if you will, chafes under an equal tyranny, because in a Democracy Compulsory Accident Insurance is symbolized by the ashes which Dives and his brother Pauper are compelled to scatter upon their icy sidewalks as an outward sign of their belief that all men are born equal, at least with respect to the brittleness of their bones. Compulsory sickness insurance, however, banishes Pauper to a realm where it is always cold, and makes of his life one long "winter of discontent." He is always sprinkling ashes to keep from slipping, today, tomorrow, next year, and the year after. You say that Dives and Civitas contribute to the ash pile. You are right, but they do not contribute to the coal heap. Pauper must have ashes when he cannot afford to buy coal: or he must have sand, when he cannot afford to own a sand pit. I prefer to live in a world where doctors and nurses and undertakers are men and women and not manni-

kings; where hard material poverty is a less hopeless existence for the children of the poor than the spiritual poverty of dehumanized compulsory thrift; and where life for all is to some degree a great adventure guided by Divine Providence, and not a miserable existence in which there is hardly time enough for "chill penury" to cancel beforehand the price of physic and shroud and embalming fluid under the industrial efficiency of a melancholy social justice. I want to live in a world where the doctor and the undertaker can be "stuck."

In finally disposing of any objection to the principle of compulsion, Rubinow, in addition to the arguments which I have answered above, makes this statement: "The claim that this legislation is applicable only to a despotic form of government seems to be readily disposed of by the British Act of 1911." Rubinow is illogical. The truth is that *despotic government* is applicable to all compulsory legislation of the "Thou shalt" type. The character of its legislation is the only test of your form of government. A president may be the head of an autocracy—not long, but long enough to need every variety of compulsory insurance. A king may preside over a model democracy, but if he has any campaigning blood in his aorta to give a tone to the royal variety, he will demand biennial coronations, and exchange the crown and the ermine for a tall hat and a frock coat.

In 1909, Lloyd George, then Chancellor of the Exchequer, presented his now historic budget to the House of Commons. He dwelt at some length upon the humanitarian nature of the program of social legislation which the Liberal Party was carrying through. Among other things, he said: "When Bismarck was strengthening the foundations of the new German Empire, one of the very first tasks he undertook was the organization of a scheme which insured the German workmen and their families against the worst evils which come from these common accidents of life. And a superb scheme it is. It has saved an incalculable amount of human misery to hundreds of thousands and possibly millions of people who never deserved it.

"Wherever I went in Germany, north or south, and whomever I met, whether it was an employer or a workman, a Conservative or a Liberal, a Socialist or a Labor Union leader—men of all ranks, sections, and creeds, of one accord joined in lauding the benefits which have

been conferred upon Germany by this beneficent policy. . . . Several wanted extensions, but there was not one who wanted to go back. . . . By removing that element of worry and anxiety from their lives, it has improved their efficiency."

In his peroration, he said: "I am told that no Chancellor of the Exchequer has ever been called upon to impose such heavy taxes in time of peace. This, Mr. Emmot, is a war budget. It is for raising money to wage implacable warfare against poverty and squalidness. I cannot help hoping that before this generation has passed away, we shall have advanced a great step toward that good time when poverty and wretchedness and human degradation, which always follow in its camp, will be as remote to the people of this country as the wolves which once infested its forests.

His speech was a tribute to the mastery of the German propaganda which ministered to his every want and every thought during his Kultur-conducted trip through the land across the Rhine. He was converted to the German theory that history is merely the story of man's search for food, and that therefore the masses, in Bismarck's words, "will sound their bird call in vain," if they are plentifully supplied with carbohydrates and cathartics, fats and ferruginous tonics, proteids and proto-iodides. In short, give them compulsory servitude and physiological life lest, like Patrick Henry, they threaten suicide by demanding liberty or death; for, forsooth, modern man will recede to the abysmal brute if he learns that history is one long struggle of spiritual man to free himself from the bondage of vegetable, animal, human, and physical tyranny. In post-war language, Lloyd George was gassed, and England, instead of retreating a long step from poverty, had advanced many leagues toward the long pursued and almost captured phantom of Prussianism. At the very moment in which he was complacently referring to the remoteness of the wolf-infested forests, other wolves, more dangerous, were infesting the highways and the byways, the public edifices and the innermost sanctuaries of his country.

If Lloyd George succumbed to the anaesthesia of Kultur, so did we. From Hanover street, Boston, to Riedesel avenue, Cambridge; thence to Bismarck, North Dakota, and beyond, Kultur replaced the ozone in the atmosphere.

When Burgoyne surrendered at Saratoga, his

troops, including the German mercenaries, were marched across Massachusetts and imprisoned near what is now Prospect Hill, Somerville. Baron Riedesel, who with Breymann, who was killed, commanded the Germans at Saratoga, was quartered at Cambridge in the house now known as the Sewall-Riedesel House, standing on Brattle street, between Sparks street and Riedesel avenue. When I first learned this fact, I was a young pupil in a school near Harvard Square, where I received my early instruction in American history. It happened that the Baron scratched his name on a window-pane which was broken by a painter hired to remove it from its frame in order that it might be preserved in some safer place. I recall with much amusement that in telling us this story, the teacher of history who first impressed us with the turpitude of the mercenary Hessians grew indignantly eloquent as she flayed the clumsiness of the workman who broke that pane of glass. I wonder if that painter was not really a patriot who purposely demonstrated that even loyalty and inefficiency are not incompatible. There can be no reason for naming a street for a man who rented his vassals to kill others; especially when that street is in a small district which is hallowed by such memorials of the Revolutionary Era as the Washington Elm, the house which was Washington's headquarters, and the church in which he worshipped. In this country today, the Riedesels are called gun-men. New York has not named a street for Gyp the Blood.

During the winter of 1903-04, when serving as house officer at the Boston City Hospital Relief Station in Haymarket Square, Boston, I made many an exciting trip on the ambulance behind a handsome dapple gray horse named Bismarck. The name was not altogether inappropriate, for let it be truly said that that dapple gray was no more fascinating as a horse than Bismarck was as a man. I am merely stating some simple facts connected with our Germanization: I do not wish to deride Bismarck, because I think that he had some heroic qualities, and that he was easily the best poker player at the table of international politics where bluff and legerdemain were the primary qualifications. I did not think in those days that had that ambulance horse been named Kosiusko, he would have been no less a thoroughbred if he symbolized by his name our gratitude to neglected Poland. At Saratoga,

Kosiusko, a volunteer in the army of America, helped to save us; in the same battle, Riedesel, a hired man in the army of the German King of England, threatened to destroy us. Cambridge has named a street for Riedesel; Boston might have named a horse for Kosiusko. It never occurred to me then how appropriate it was that a rathskellar should be opened on a street called Hanover, or how inappropriate it was to have it in a hostelry called The American House. Here Americans, bored by decadent American life and ignorant of the halcyon days of the old Revere House up the street, sipped from a vessel called a stein their Pilsener and Wurtzburger, or slaked a more expensive and less American thirst with Rhine Wine and Seltzer or *Danziger goldwasser*. Every college class banquet was staged "down where the Wurtzburger flows"; and finding this Kultur idea of salesmanship successful, Fritz lost no time in teaching us to sing "Under the Anheuser-Busch." I take off my hat to Fritz; I am thankful for my hat. This was that care-free period when a young Harvard class used to march into the Stadium or disturb New London and New Haven with the announcement, in an old refrain, that they were "the best companie that ever came over from old Germanie." The joke isn't any more on them than on us. We are all doing an intellectual goose-step. I was present when the old University conferred a degree of distinction on a Hohenzollern, in an edifice dedicated to some gallant gentlemen who gladly gave their young lives "that this nation under God might have a new birth of freedom, and that liberty of the people, for the people, and by the people, might not perish from the earth." On that day, beneath the shield of Veritas sat von Tirpitz, huge in stature and scowling through a wilderness of whiskers. Since then, I have learned that Kultur possesses sufficient elasticity to allow me to link his origin with the Latin word *turpis*, meaning base or mean. The "Lasitania" never had a chance even before she was a thing of blue prints. Vanitas had secured a "toehold" on Veritas.

Finally, in August, 1914, a Kultur-hypnotized world woke from its sleeping-sickness to behold pageant which some have described as mediaeval. It was not mediaeval, but modern. It was efficiency, applied science, and Compulsory Insurance proudly exhibiting the crude art of their Krupp masterpiece of materialistic indus-

trialism. If the German machine which was wrecking Belgium was big with physical power, it was bigger still with spiritual weakness, for the army of the Kaiser was a thing as soulless and as mechanical as any gun turned out of the factories at Essen. Then from out of England, whose process of Prussianization was being completed by the Compulsory Insurance Act, came the cry that Democracy must fight for its life. In the early days of the war, we heard that the common Englishman was not responding to the call, and that the burden was being borne by the sons of gentlemen—gentlemen also, let us hope. How could the common Englishman understand what was meant by Democracy? Was he not being educated to appreciate the beauties and the advantages of a system gratuitously bestowed on him by Germany, the land out of which came everything that was good and perfect? How could these superior people who gave him Compulsory Insurance wish to destroy him?

How could the Irishman share the indignation of England at the German invasion of Belgium? Remembering his history, he surely could not be blamed if he did not forget that England paid these same Germans to invade Ireland and to wreak a more cruel vengeance on the Irish people. It was the fault of England to forget what he remembered—that his fathers had been humiliated at the Battle of the Boyne, when, at the request of England, a Dutchman, named William of Orange, came to devastate his land with an army of mercenaries in which Germany was well represented. Macaulay proudly says: "Germany had sent to the field some warriors sprung from her noblest houses. Prince George of Hesse-Darmstadt, a gallant youth, rode near the king. A strong brigade of Danish mercenaries was commanded by Duke Charles Frederik of Wirtemberg. Among the foreign mercenaries, was a Brandenburg regiment." Macaulay can even mention mercenaries with a thrill of pride. For the benefit of those who do not know the early history of the Hohenzollern family, let me say that they were at this period grafting politicians and ward bosses in the Mark of Brandenburg. Their business was raising soldiers and renting them at good profit to England, where they found a ready market. In short, they raised soldiers for the market as we raise geese. This is the origin of the goose-step. Irishmen will please

take notice that the Hohenzollerns began to have a good practice after the Battle of the Boyne. They made good for England, not only at the Boyne, but also at Limerick, where Sarsfield more than two hundred years ago first discovered that a treaty was a scrap of paper. Belgium was not conceived when the Treaty of Limerick was Prussianized by England.

Although the Irishman did not remember everything, he did not forget that when Gladstone went down to defeat in 1886 on the Home Rule Bill, a Lord named Salisbury became Prime Minister. Salisbury did not give Home Rule to Ireland; he did give Heligoland to Germany. He swapped a long-range gun in the North Sea for a dull jackknife in Africa. And if it be a doubtful truth that the English fleet was our first line of defense, it was because of the real truth that Heligoland had been abandoned as the first line of defense for England. The Irishman would have been a dullard if he forgot that only a few short months before, in March, 1914, Brigadier-General Gough and fifty-seven other officers of the Third Cavalry Brigade announced that they preferred to accept dismissal from the English Army rather than be ordered to act against Carson and his Ulsterites in putting down the rebellion against Home Rule. For more than two centuries, the son of Erin had been the unhappy victim of Prussian cruelty instigated by an English-speaking nation which proclaimed its sympathy for German methods of government even before that day when they imported from Germany the first member of the House of Hanover, George I., who could not speak English, until that day, not many years ago, when a Germanized English people supinely accepted that supreme piece of Prussian legislation from a ministry whose ideas of Democracy were learned from a book called "Kultur," in which Democracy is defined as a psychopathic condition between a delusion and an hallucination. Is it any wonder that the common Englishman and the unhappy Irishman refused to believe their eyes? Soon, however, they were to find out that for them, too, in this denatured world, de-Germanization is the first law of self preservation. England could not mobilize until she made an honest attempt to de-Prussianize.

The spring of 1918 was sowing upon a sorrowful world when Douglas Haig, a Knight who might have sat with King Arthur at the Round Table, announced that his men were fighting

with their backs to the wall. He would have been more accurate had he said that they were fighting with their faces toward the fiendish cruelty of a system which made beasts of men. If at home in the spending of his wages, the prodigality of the English Tommy was limited by the Compulsory Insurance Act, here where the wages was death, there was no limit placed upon his extravagance. Thus the battle went, not to those who were born into Prussianism, but to those who, though legislated into it, were determined that their children should not inherit it as a birth-wrong; and thus that old pun of Gregory the Great, "*non Angli, sed Angeli*," became a prophecy fulfilled—these common Englishmen were men with souls. De-hyphenation was disinfecting the world. Having had no one at home interested enough in him to unravel the complexities of his Anglo-Saxon pedigree, the common Englishman became his own tutor in France, and he never stopped to inquire who the devil a bally Angle was when he found the Saxon in the ranks of the Kaiser.

At the lower end of that line of battle, the day was almost lost when Gough at the head of the Fifth Army Corps failed to maintain his contact with the army of Foch. This was the same Gough who a few years before showed his Prussian spirit by refusing to oppose Carson and his brother Ulsterites, although *de jure* and *de facto*, they were rebels. His experience in France with the troops of the Hohenzollern family of Brandenburg was less delightful than that of a former generation of Goughs and Carsons who fought on the same side with the Brandenburg brigands at the Boyne. The Hohenzollern hinds were no longer on the payroll of England.

Down that long line of carnage and desolation stretching from Switzerland to the sea, history, many said, was in the making. It is paradoxical, I admit, but more true, that history was in the unmaking. The descendants of those who fought under Wellington were fighting with and not against the descendants of those who fought under Napoleon. For the first time in her history England was fighting against her old ally of Waterloo. And now with her very existence threatened, she sought the leadership of Foch, that master of Napoleonic strategy, that Sir Galahad, who represented nothing in defense of which either England or Germany had established their perfidious reciprocity of mer-

cenary militarism. She had imported hired German troops into Ireland; she had placed a German line of rulers upon her throne; she had sent an army to the continent to help Frederick the Great, of the family of Hohenzollern; she had sent German gun-men, under Riedesel and Breymann, to fight against us in the Revolution; she had stood with Blücher and his Prussians at Waterloo; she had uttered no emphatic protest when Bismarck took Schleswig-Holstein from Denmark, and pried Alsace-Lorraine off the land of France with his military-diplomatic "jimmy"; she had given over Heligoland to the Kaiser; she had abetted the German attack on Venezuela in 1902, when the Kaiser, under the pretence of attempting to collect some money due to Germans, was in reality testing the readiness of Theodore Roosevelt to defend the Monroe Doctrine; she had legislated her industrial population into the Prussian system of Compulsory Insurance; she had allowed to go unpunished the disgraceful affair in Ulster, which gave Germany good cause to eliminate her as a serious opponent in war; and here she was on the soil of France fighting to avoid destruction by a power which she in a large measure had raised to its present state of unmitigable arrogance. England, at least, did not deserve the hatred or ingratitude of Germany. I am but expressing the opinion of a living Englishman, who, paraphrasing the words which Shakespeare put into the mouth of Wolsey, said that *if England had served her God with half the zeal she served the German kings, there would not have been one remnant of them in her path either to slander or to slay her*.

The American who is constantly reminding his countrymen that England is not hostile to us may see in this indictment an evidence of our hostility to England. Imperfectly understanding his history and lacking genuine appreciation of the Democracy in which he is privileged to be a citizen, the American Anglo-philic type of patriot is a weak advocate either for England or for this country. We are not hostile to England just because we do not choose to forget our history. We did not leave her as a bride tearfully going forth from her father's house, richly dowered, and fortified with the family blessing; but after seven long years of bitter sacrifice, we went our way, a struggling nation, "with malice towards none

and charity for all." We are not hostile to England just because we understand *her* better than she understands us. We did not steal her institutions, her language, or her common law, any more than we stole the idea of covering our nakedness. There are some things which cannot be patented. We do not dislike dukes or princes; we like men. We do not think that England is discourteous or hostile; we believe that she is ponderously courteous but socially prudish. Possessing a courtesy which is part of our sense of humor, and being unwilling either to offend or condone the idolatry of worshipping social caste, we allow ourselves to become towards her prudishly sociable; she, possessing a courtesy which is entirely lacking in a sense of humor, cannot understand that we assume this pardonable virtue in order to be merciful to her unpardonable social chastity. She having a House of Commons, thinks that we are common; we, having no House of Lords, do not believe that she is altogether uncommon. She endeavors to hypnotize us with her hoary antiquity by continually reminding us that she is an incubator for the "sons of gentlemen." We do not think that we are parvenus because we make a specialty of breeding "fathers and grandfathers of gentlemen."

Some years ago, the American Ambassador to England invited an American girl to attend with him the coronation of King Edward VII. in London. When, however, a debate arose as to whether she should be received as a princess, both she and her father lost their patience and the proposed trip was abandoned in disgust. That young lady was the daughter of the then President of the United States. Her father was Theodore Roosevelt.²

Many years ago, the late John L. Sullivan, then the champion of the world in a sport called the manly art, was kind enough, while in London, to honor the invitation of an athletic club to box an exhibition before the late King Edward, then Prince of Wales. On presenting himself at the club entrance with his friend, Arthur Brisbane, the journalist, at that time an American correspondent in London, Sullivan was told that his friend could not accompany him. The reason given was that Brisbane was a newspaper man. Thereupon John L. decided that there would be no exhibition, and of course the Prince of Wales, as

well as Sullivan and Brisbane, enjoyed the bout.

These are mere trifles, you will say. They are trifles; and that is *exactly* what the matter is with England. She obscures our vision with a smoke-screen of pettiness, and expects us to confuse it with *our* horizon. If she would only get rid of that "cussed" smoke-screen, she could catch up with us—in three generations.

France, with all her foibles and follies, had something left of the virtue of consistency. Now, as always, she was fighting the Hun. Preyed upon by German propaganda, bringing Socialism in its wake; maligned as a leper fiendish in his lust for women, the Frenchman was at least proving to the world that infra-men might fall victims to women and yet not be vanquished by any foe among supermen. And if there were some short-sighted individuals whose hatred of France led them to espouse the cause of Germany, it was an indication not of the decadence of France, but of the moral debility and ignoble rage of an era, in which nations and individuals, loudly professing a militant Christianity, allied themselves with the Turk by walking like wolves into that pen of devilish philosophy from which is shouted that specious slogan of materialistic internationalism, "the brotherhood of man and the Fatherhood of God." I am not forgetting that in 1878, nine days before the Congress of Berlin met, Great Britain concluded a treaty with Turkey, whereby in return for permission to occupy the island of Cypress, she pledged herself to maintain, by force if necessary, the integrity of the Sultan's remaining possessions in Asia. Furthermore, she was a party to the crime of thrusting the Macedonian Christians back under Turkish rule, because she believed that her own interests at the Dardanelles demanded a Turkey strong enough to defy Russia. This was Disraeli's "peace with honor." Germany was only imitating her tutor when she sold herself to the Turks. Even France had shaken the hand of the Turk, when under Louis Napoleon she entered the Crimean War on the side of England and Turkey, and afterwards subscribed to that pleasantry in the Treaty of Paris which stipulated that Turkey's promises to be a good boy gave no power the right to interfere on behalf of the Christians. Verily, cleanliness is next to devilry, when empires take a Turkish bath.

The Bible and the Koran: Christianity

and Islam; Christ and Mohammed. If, after July first, that is the only cocktail left for us to drink, I am for a bone-dry world, even to the waters under the earth. One might think that hating France for her infra-socialism consisted in loving Germany for her super-socialism. Yet neither the infra-socialism of France, nor the super-socialism of Germany, nor the refined anarchy of a Turko-Prussian despotism was able to break Foch, or to cause him to doubt for a single instance the justice of his cause. If France, like many of us, forgot much, Foch, unlike most of us, remembered more and saved us all. Hearing some men of Irish blood disparage France and glorify Germany, one would think that Saint Patrick was a Brandenburger and that he came out of Germany to Ireland. If the man of Irish blood has preserved his nationalism, if he has remained true to Christian ideals, if he does not fill the ranks of anarchy, if his women do not include many more than a corporal's guard in the army of prostitution, if he stands for the authority of wise and just democratic government,—he owes his heritage to the teaching of Patrick and not to Prussianism. If the despotic Socialism of France slaps you on one cheek, don't turn the other to the despotic, even though Imperial, anarchy of Prussia. Surely France could not love Saint Patrick less than Prussia loved Saint Thomas Aquinas or England Saint Thomas Becket.

There isn't much to be said in favor of the negative sympathy and sentimentality of those who, deprived by the exigencies of war from making a holy pilgrimage to Germany to drive a gold nail into the wooden statue of the brutal-faced Hindenburg, eulogized him and his master in language more befitting the innocence and spirituality of Joan of Arc, or the humility and intellectuality of Pasteur, the hems of whose garments no Hohenzollern or Hindenburg or Hapsburg or Hanoverian was ever worthy to touch. Let those who would know the indebtedness of the world, and especially of Germany, to France read the life of Louis Pasteur. In that one Frenchman there is a debt which can never be cancelled. But particularly let them take notice of this: France did not give, either to Germany or to the world, Compulsory Sickness Insurance. In fact, in both France and Belgium, Compulsory Sickness Insurance is a dead letter, because it never was a live issue. Having ensnared the

political demagogues of France and their following of treacherous and traitorous puppets, but having failed to catch the multitude of simple French people, Kultur engaged in one of the most damnable campaigns of indecency recorded in the entire history of human degradation. Shamelessly and insidiously, crawling on her belly along her slimy course, she defamed a whole race of people as human vermin sunk to the nadir of vileness and degeneracy. But Kultur is a paradoxical performer. What she built to be a dung-hill, turned out to be a fortress, and those whom she branded as weaklings qualified as giants. On the apex of that Kultur-corroded knoll stood Foch, the soul of Veritas, confounding the Vanitas of a people *whose army could not take a dung-hill by storm!*

When the elder Pitt, in answer to those who criticized him for sending an army into Germany to help Frederick the Great, said: "If I send an army into Germany, it is because in Germany I can conquer America," he would have changed the whole course of history had he intended that statement to be an example of rhetorical irony. Had he not lacked the humor to be ironical as well as the statesmanship to visualize the future, his boast would have meant, "If I send an army to America, it is because in America I can conquer Germany." It was precisely because this did not happen in 1918 A.D., that America sent an army into Germany, not to conquer Germany, but to help England to retrieve, in part, the historic, diplomatic, and rhetorical Teutonic blunder of Pitt, the Earl of Chatham. He might have made impossible the rise of the United States of America and the German Empire. We were paying an old debt to Lafayette, de Grasse, Rochambeau, and Pasteur. The American soldier was not a product of Prussianized legislation. Along that whole line from Switzerland to the sea, there is not a solitary argument in favor of Compulsory Health Insurance, either west or east of the sad memorials which mark Prussian efficiency in Compulsory Desolation.

I have no apology to offer for placing this subject in the simple frame of historical truth. In the entire history of the two nations where this compulsory legislation has been enacted, there is no evidence to lead us to believe that it is supported by an ethical arch. It is a bloodless solution by the economies of

materialism. It is as heartless as the alliance with the Turk, and the abandonment to the Turk of the Macedonian Christians. It is the demotion of Christian philosophy in favor of mathematics—and grammar school mathematics at that. I know that it is the custom in our day to sniff at ideals as platitudes, and idealists as dreamers—a custom which is a haven of refuge for the fellow who is constantly objecting that the other fellow isn't practical. It is this practical fellow who falls for the "brotherhood of man and Fatherhood of God" stuff, because he isn't practical enough to understand that the Fatherhood of God is the brotherhood of man. "Let us first construct the brotherhood of man," he argues, "and, presto, you have the Fatherhood of God." This fellow is too *practical* to know the difference between cause and result. Let me say to my practical friend that he is a blind stool-pigeon for the materialism of individualism and internationalism, and that he is preparing himself for serfdom in that economic Utopia of Bismarck, the fatherhood of barons and the brotherhood of serfs. That is what I mean by *Libertas* and *Aequalitas* looted by *Fraternitas* and *Paternitas*. The practical fellow too often learns his philosophy of government and of life in a correspondence course on the psychology of salesmanship established by our old friend Fritz. But observe that Fritz does not offer any courses in the psychology of buying!

This *caucat emptor* (let the buyer beware) idea of business has led to the *caucat civis* (let the citizen beware) idea of government, and while such an idea maintains either in business or in government, justice, call it legal or social, as you please, will be a mere hypocrisy, in which might or cunning will always prevail over right unless we have a Lincoln or a Roosevelt to lead us. This devouring, insatiable, and lawless appetite for material advantage, which Woodrow Wilson calls "the New Freedom," but which Theodore Roosevelt called the old, old, freedom, is a pathological condition imposed upon civilization by the industrial frenzy which subordinates everything from life to life everlasting to the creation of world markets, and to the artificial regulation of the old natural law of supply and demand. Unhappily the problem which Health Insurance is attempting to solve is ever present, and moreover, I would be the last one to deny the

advantages of insurance, health, or any other kind. My purpose is merely to assert that in this country, the family, which is the spiritual unit of the State, cannot also be the spiritless unit of industrialism. The triumph of industrialism means the Absolute State, the last act in the exploitation of the poor and lowly of mankind. This whole subject is so vast that it must be debated and settled in the forum of the Nation; because otherwise its solution will be a horrible nightmare induced by the crazy-quilt created from multiform and multi-colored patches of State legislation. Before our Country attempts to wrestle with sickness and unemployment insurance, we must have more compulsory decency, more compulsory democratic government, more compulsory Americanism, and more of that compulsory practical Christian Philosophy, both in business and in government which is symbolized by the square deal and the big stick—yes, and by every act in the all too short life—of Theodore Roosevelt.

"Far-called our navies melt away—

On dune and headland sinks the fire—

Lo, all our pomp of yesterday

Is one of Nineveh and Tyre!

Judge of the Nations, spare us yet,

Lest we forget—lest we forget!"

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² Morgan, James: Theodore Roosevelt, the Boy, and Man, p. 282. The Macmillan Co., 1907.

KÖHLER'S DISEASE OF THE TARSAI SCAPHOID IN CHILDREN.

BY FREDERICK W. O'BRIEN, M.D., BOSTON.

Instructor in Roentgenology, Tufts Medical School; Visiting Roentgenologist to the Cambridge Hospital, Mt. Auburn Street; Cambridge Municipal Hospital; and Boston Consumptives' Hospital; Member of the American Roentgen-Ray Society.

KÖHLER'S DISEASE of the tarsal scaphoid is probably a non-infectious process confined, as its name implies, to the tarsal scaphoid, seen only in children, clinically characterized by swelling of the foot, pain on palpation and weight bearing, usually without constitutional signs, giving some history of trauma and presenting a distinct roentgen picture and a good prognosis.

The affected scaphoid returns to normal with

indifferent treatment and fundamentally the disease appears to be due to delayed development of the ossific centre of this bone, which is stimulated to osteogenesis by traumatism (although the pathogenic organisms have not definitely been ruled out as causative agents) much as the isolated embryonic cells are supposed to be in carcinoma. The pain and swelling may be due to a post-traumatic osteitis.

Less than a score of cases have been described in the literature so that to date it may be considered rare. Doubtless, before Köhler's study in 1918 and since that time when he reported three cases, it has been frequently diagnosed as cold tubercular abscess. As its characteristics become more widely known, no doubt we shall speak of it as something infrequent but not rare.

Pfahler,² in 1913, reported a case, and at that time reviewed the literature, including Köhler's three cases and one each reported by Behn, Dobisch, Haennisch, Preiser, and Schaffer. Pfahler's case was in a boy three and a half years of age, who had recurrent attacks of lameness in the right leg which came on suddenly, lasted several weeks, and then disappeared. All of these cases were in boys, and four gave a history of traumatism. Pfahler's case gave no such history and in his case the lameness and pain disappeared in two days, which he thinks is against compression fracture which Stumme³ holds is the condition really present. Pfahler concludes that because of the increased density at the point of ossification noted in the roentgen plates, the process is an inflammatory one, an osteitis probably of traumatic origin, which interferes with development of this bone.

Rotch and George,⁴ in 1910, described a case which occurred in a boy six years old. The roentgen examination showed a very much undeveloped scaphoid in the left foot. This boy had a twin brother in whom the roentgen ray showed a very much undeveloped condition of the scaphoid but to whom this abnormality did not cause any trouble.

Schultz,⁵ in 1912, made a study of seven cases and believed that the narrowing of the scaphoid is due to injury, probably a fracture of the ossification centre of this bone.

Wohlaner,⁶ in 1913, reported three cases. He states that while trauma may be a factor, that the condition is due primarily to defect in the mechanism of bone development.

Fassett,⁷ in 1914, suggested that the condition is a tubercular process healed and sclerosed, attention not being drawn to the foot until the wall of cicatrization is broken down and causes pain.

Hetzel,⁸ in 1917, reported a case of his own and reviewed some twelve cases in the literature. He, too, believes that while trauma may be the exciting cause of the condition it is not the fundamental one. His own case was carefully studied and showed a negative Von Pirquet and negative Wassermann. He notes that the roentgen picture in tuberculosis and Köhler's disease are not alike. The fact that the scaphoid returns to normal anatomical appearance would seem to rule out not only tuberculosis but also the theory of compression fracture and pathogenic osteitis.

Stumme has carefully described the appearance of the roentgenogram in his case showing the trabeculae of bone pushed together with a little splinter of the cortex broken off, and suggests that because of the flat shape of the scaphoid in contradistinction to that of the cuboid and cuneiform this tarsal bone is anatomically favorable for injury of this type. Hetzel and Pfahler, however, point out the absence of history of injury in a large number of the cases as well as the gradual onset which would be against such a conclusion.

Preiser⁹ also inclines to the possibility of this disease being a compression fracture and has reported several cases of fracture of the carpal scaphoid following a slight injury which was sufficient, however, to disturb the blood supply to the bone, permitting a rarefaction and consequent compression fracture. No bacteriological or microscopic studies have been made in these cases, naturally enough because of their spontaneous cure, and Hetzel points out that Kidner has reported a case of Perthes' Disease, similar in some respects to Köhler's Disease, upon which he operated and recovered a staphylococcus aureus of a blood stream infection, mild in character and capable of spontaneous cure. Operation on a case of Köhler's disease might disclose the same condition, and in this condition Madelung's deformity of the wrist, the true nature of which is still a matter of speculation, should not be lost sight of.

It is known that the scaphoid is among the last of the bones of the tarsus to ossify. Haennisch¹⁰ believes it to be a defective ossification of the epiphysis of traumatic origin.

The symptoms of all cases have been similar, with onset sudden or gradual, limping, with pain on weight bearing or on palpation, with swelling with and without redness over the scaphoid. The roentgenogram is typical.

Bertolotti¹¹ has written at length on the x-ray appearances, which in substance are as described by Köhler, and summarized by Hetzel. The scaphoid shows changes in four ways: 1. Size. One-half to one-quarter smaller than normal; 2, form entirely regular; 3, architecture impossible to recognize, cortex and spongy portion running together; 4, density increased two to four fold.

The prognosis seems to be invariably good. Köhler says the disease may extend over a period of two to three years. Wohlauer points out that the trouble disappears under different or indifferent forms of treatment. Most writers report rest and support in some form.

CASE REPORT. Girl, aged 3 years, referred by Dr. E. J. O'Brien, December 29, 1918, for roentgen examination. Chief complaint, limp with pain and swelling, without redness, in left foot over scaphoid. Family history, father and mother living and well, home surroundings excellent, no other children. Personal history, normal birth. Past history, none of the diseases of childhood, no illness until present. Present history, one week ago child began to limp and on inspection of foot parents noticed left foot swollen and painful. At no time was there any redness of the foot noticed. Child gave an indefinite history of having tripped over some object or having been struck with plaything by one of her companions. No constitutional signs.



FIG. 1.—Arrow points to affected scaphoid. Normal scaphoid is seen on right foot.



FIG. 2.—Lateral view of affected tarsus.

X-Ray Examination. Both feet were examined and the typical appearance in the left scaphoid (Fig. 1) detailed above was made out, the affected scaphoid being smaller than normal, irregular in outline with no distinction between cortex and spongy portion and much increased in density. Patellae* not radiographed.

Subsequent Roentgen Examinations. January 1, 1919, showed increase in size and decrease in density. February 17, 1919, showed further change toward normal. Patient meanwhile had been in plaster cast which has been removed and patient now is about without any support and without clinical signs.

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REPORT OF THE INFLUENZA EPIDEMIC AND EXPERIENCE IN THE USE OF INFLUENZA VACCINE "B" AT THE WRENTHAM STATE SCHOOL, WRENTHAM, MASS.

By GEORGE L. WALLACE, M.D., WRENTHAM, MASS.
Superintendent.

THE total number of cases of influenza at the Wrentham State School during the months of September and October was 740, with a mor-

* In one case reported by Köhler a similar pathological condition was noted in the patella.

tality of 27 cases. The infection was general, extending to all departments of that institution.

The epidemic was brought to the institution by two employees who had been away from the school for a few days and returned to the institution ill. The first employee returned on September 12, and the second, on the 15th. Neither of these cases was seriously ill and at first were considered severe colds. In a few days, however, many of the inmates and employees of the institution became suddenly ill, manifesting influenza symptoms, and by the 20th, the invasion had reached the epidemic stage, there being on that day 122 persons ill of influenza at the institution.

As soon as we learned we could secure influenza vaccine, we began to vaccinate our employees. Through the kindness of Dr. Leary we were able to obtain vaccine to use for prophylactic purposes for all our employees who cared to avail themselves of this treatment. We vaccinated 71 employees. Out of this number five afterwards contracted the influenza. Fifty-eight employees were not vaccinated, and out of this number 38 contracted the disease. We also vaccinated 30 of our high grade girls who constantly assisted in the care of the sick, and out of this number three contracted the influenza.

In a building in which lived 156 inmates, 28 inmates were vaccinated. Out of these 28 vaccinated cases, only one contracted the influenza. Of the 128 unvaccinated cases in this building, all equally exposed with the vaccinated cases, 64 contracted the disease.

A NEW INCISION FOR APPENDECTOMY.

By LEIGH F. WATSON, M.D., CHICAGO.

MANY writers have noted that in the cadaver the base of the appendix is found at McBurney's point, while in the living subject it is below this point, usually on a level with the center of Poupart's ligament. A number of operators have called attention to the ease with which the appendix can be removed when operating for right inguinal hernia. Since 1910, I have used a new incision, with its center over the base of the appendix, and believe that in

many cases it is an improvement over those in general use.

Incision. A point one and one-half inches from the right anterior superior spine, on a level with a line connecting the two superior spines, is selected for the beginning of a vertical incision which extends directly downward for two or three inches to a point just above, and to the inner side of the internal abdominal ring.

Advantages. Traction to expose the appendix is avoided, because this incision, in the external oblique and its aponeurosis, the most resistant structures, is directly over the base of the appendix. It can be enlarged without weakening the abdominal wall. The ilio-hypogastric and ilio-inguinal nerves are not injured because the incision lies between them. Because this incision is made over the cecum, the small intestines do not crowd into the wound as they do when the McBurney and lateral rectus incisions are used.

PNEUMONIA AND EMPYEMA.

By FIRST LIEUT. HORACE GRAY, MEDICAL CORPS,
U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens,
Mass.]

(Continued from page 424.)

37. *Consolidation Clinically.* yet not at autopsy has several times been the dismay of the ward surgeon. Fluid and a compressed lung were all that were found. This may have been the pneumococemia without pneumonia, as just discussed. On the other hand, we cannot yet exclude (sceptical though we may be) the possibility that the lung may have been truly solid and later resorbed. Such a process is, however, indicated by a case report by Cole (p. 1150) of "typical lobar pneumonia during convalescence from measles. The blood culture showed the presence of pneumococcus type I. He developed fluid in the left chest which was purulent, and contained pneumococcus type I. and S. haemolyticus. He died three days after the tapping, and at necropsy no pneumonia was found, but several small abscesses in the left lung and a very large amount of purulent exudate in the left pleura."

Summaries of our five cases follow, in order of the volume of fluid found at autopsy. The fifth case, 7075, is especially convincing, because there was so little fluid and no atelectasis that the clinical findings of solid lung could hardly be ascribed to atelectasis even by the greatest doubter.

Reg. No. 11218, a clinical lobar pneumonia, L.L.L., organism unknown, developed on the sixth day an empyema, 3cc. cloudy fluid, showing in culture streptococci. Patient died the next day, and gross pathology showed no pneumonia but complete atelectasis of the left lung with 2600 c.c. pus.

Reg. No. 12192 a clinical and X-Ray lobar pneumonia, L.L.L., type IV, developed on the sixth day an exudate, 80 c.c., turbid, showing a smear of occasional pneumococci but a negative culture. Despite this apparently benign effusion he died on the 11th day, and the morbid anatomy showed: "Atelectasis of the entire left lung but no evidence of pneumonia at present," 2200 c.c. fluid in the left pleural cavity.

Reg. No. 12313 a clinical lobar pneumonia, L.L.L., organism unknown, died without diagnosis of fluid. Necropsy showed 1200 cc. with multiple abscesses of the left lung but no pneumonic consolidation.

Reg. No. 8920, a clinical lobar pneumonia, R.L.L., organism unknown, on the eighth day developed empyema, 550 cc. pus, growing streptococci. He was operated on the same day, and 500 cc. obtained. He died 25 days later, and on the table showed no pneumonia but only 150 cc. in the right pleura.

Reg. No. 7075, a clinical pneumonia of both lower lobes, organism unknown, on the 20th day developed bilateral empyema, 60 cc. from the lt. and 100 cc. from the rt. side, both turbid and both growing streptococci. He was promptly thoracotomized on the left but no fluid was obtained. He died 24 days later, and on the table showed *no fluid* in either chest, but only a broncho-pneumonia on the R.L.L. and a "questionable pneumonia" of the L.L.L.

38. *The Time of Development of 60% of our empyemas was within the first two weeks of the pneumonia. The mortality of empyemas developing within one week after the onset of pneumonia was 41%, vs. 26% in those developing during the second week of the pneumonia, and 7% in those developing later.*

TABLE XXIV. TIME OF ONSET OF EMPYEMA.

	NO. OF CASES	PER CENT. OF ALL 77 EMPYEMAS	NO. DEAD	CASE MORTALITY
In 1st week	27	35%	11	41%
In 2nd week	19	25%	5	26%
In 3rd week	6		1	
In 4th week	7		0	
In 5th week	1		0	7%
Post mortem	17		17	
Total	77		34	

39. *The Value of Operation* was great. Unoperated empyemas with mixed pneumococcus and streptococcus were 66% fatal, with streptococcus without pneumococcus 71%, and with pneumococcus without streptococcus 79% fatal. A positive culture of streptococcus, and even more of pneumococcus (contrary to the opinion in the past), indicates operation, in the feeling of the medical service. The surgeons are inclined to demand in addition a certain amount of pus or embarrassment of respiration. The operated empyemas were only 21% fatal, while of the unoperated 74% died. The large number of unoperated empyemas, 34, was due mainly to failure to diagnose 17 of the cases; of the remaining 17 unoperated cases, nine were refused operation and lived, while eight were refused operation and died. These eight were refused operation because the surgeons felt that their slim chances were more likely to be wiped out by operation than improved. In other words, they too frequently had purulent polyserositis (in 4) or were in extremis.

TABLE XXV. EMPYEMAS OPERATED AND NOT OPERATED.

	No. Cases	DEAD	
		No.	Per Cent.
Pneumococci alone.	{ Operated	8	0
	{ Not operated	14	79%
	{ Total	22	50%
Streptococci alone.	{ Operated	26	8
	{ Not operated	14	71%
	{ Total	40	45%
Pneumococci and streptococci mixed.	{ Operated	7	14%
	{ Not operated	6	66%
	{ Total	13	38%
Unknown organisms.	{ Operated	2	0
	{ Not operated	0	0
	{ Total	2	0%
Not operated.	{ Diagnosed	17	8
	{ Undiagnosed	17	100%
	{ Total	34	74%
Operated.	Total	43	9
Total empyemas		77	34

40. *Early Operation* was apparently associated with high mortality, 44%, vs. 7% for the empyemas operated more than two days after the diagnosis was made. In reality this high early

mortality may have been dependent on the fact that the patients were so severely sick that delay in operating was not considered. For proof there is still needed paired cases of about equal gravity, one patient operated immediately on diagnosis and the other after an interval, of perhaps four days.

TABLE XXVI. TIME OF OPERATION.

	No. EMPS.	No. D.	CASE MORTALITY	
Operated on 1st day of emp.	6	3	50%	44%
2nd	10	4	40%	
3rd	2	0	0%	7%
After 3rd	25	2	8%	
Total	43	9	21%	

41. *Nature of Operation* was in all the cases in this series thoracotomy alone *i.e.*, incision into the pleura without costectomy.

42. *The Pathological Anatomy of pneumonia* has long been *lobar* and *broncho* (lobular). The latter has recently been subgrouped by Maccallum (p. 1153) into *lobular pneumonia* (the usual bronchopneumonia) and *interstitial bronchopneumonia*. The latter is "already fairly well known . . . In children as a sequel of measles." He goes on to emphasize on the basis of his studies in Texas:

a. That the frequency of interstitial bronchopneumonia in *adults* has not been appreciated. This failure has presumably been due to the fact stated elsewhere in their joint article by Cole: "The study of these cases has not made it possible to differentiate clinically between—interstitial bronchopneumonia and—lobular pneumonia. Consequently in clinical discussion all these cases are termed bronchopneumonia."

b. That complicating empyema is frequent in adults though not in children.

c. That "the hemolytic streptococcus is the true causative factor."

Some of our postmeasles bronchopneumonias have been found histologically to resemble Maccallum's microscopic description. The gross morbid anatomy of these lungs has been startling, "like a sponge soaked in a pail of thin bloody pus." (Camac?)

43. *Lobar vs. Confluent-Lobular*. Clinically "very often it may be impossible to definitely determine with which of the two forms we have to deal." (Norris, p. 265.) Five cases in this series were clinically lobar but pathologically proven confluent-lobular. Per contra, one case diagnosed lobular was proven by autopsy to be

lobar; and another case (at first diagnosed lobar) developed on the day before death such general râles through both lungs that the diagnosis was changed to confluent-lobular bronchopneumonia, yet necropsy showed lobar alone. Incidentally this case emphasizes the remark in paragraph 12, (a) III, that bronchitis is *part* of the disease lobar pneumonia, just as indeed has long been recognized in broncho-pneumonia. In fact bronchitis has been regarded as so intimate a part of broncho-pneumonia as to result in the frequent teaching that broncho-pneumonia is always bilateral, a view shown by Major Davis here to be often incorrect.

44. *Empyemas Undiagnosed* till post mortem made up seventeen out of the total of seventy-seven. Of the seventeen, eleven followed lobar, and six broncho-pneumonia. Fourteen had 250 c.c. or more and might, therefore, have been recognized. Only three of the seventeen undiagnosed had had an exploratory thoracentesis and in these it did not help because the fluid was encapsulated, 10,250 and 500 cc. Some improvement was noticeable for awhile, inasmuch as out of the empyemas occurring in the first 100 pneumonias, 23% were undiagnosed, while of the empyemas in the second hundred pneumonias only 12% were missed, and of those in the third hundred, 8%. Then there was a rise: of those in the fourth hundred, 40% were missed and 100% of those occurring in cases 401-485.

PNEUMONIAS	EMPYEMAS	UNDIAGNOSED
1-100	26	6= 23%
101-200	17	3= 12%
201-300	22	2= 8%
301-400	10	4= 40%
401-485	2	2=100%
	77	17

This variation in the number of empyemas undiagnosed at different times is much less striking when we compare the number missed in successive tens of empyemas. By this method, the only striking figure is the last; 5 missed out of 7. Since the interest here in tapping chests has not relaxed, it seems probable that the above variations are largely fortuitous rather than due to carelessness. The last figure, however, five out of seven, is probably not chance but is due to the rather smaller amounts of fluid (20-400 cc., average 189 cc.) in these seven patients, all negroes; and to the frequency of polyserositis (more than one cavity involved in five cases). The number of cases

missed is, however, too small to justify very definite conclusions.

EMPYEMAS	EMPS. UNDIAGNOS-ED
1-10	3=30%
11-20	2=20%
21-30	2=20%
31-40	1=10%
41-50	2=20%
51-60	0=00%
61-70	2=20%
71-77	5=71%
77	17

15. What *fatal cases might* have been saved? Possibly all these undiagnosed empyemas, had they been detected and drained. From the three facts, however, (a) that these patients were so prostrated by the severity of their infection, (b) that autopsy so frequently showed pus not only in the pleural cavity but also encapsulated between the lobes, free in multiple lung abscesses, in the pericardium, even in the peritoneum; also septicemia with and without hemolytic jaundice, (c) that in particular one of the drained empyemas still got pus both in the other chest and in the pericardium, we feel that detection and operation could not have saved more than three. Further analysis of the fatal cases reveals nothing striking.

The cause of death we have felt unable to ascribe specifically to simple pneumonia, mass of fluid, or multiple infection; but only in a general way to sepsis. And to the *severity* of the infection we have attributed these various factors, which we have regarded as complications, sometimes present, sometimes absent, in the severest septiciemias.

(To be continued.)

Book Reviews.

Anatomy and Physiology for Nurses (Fifth Edition). DIANA CLIFFORD KIMBER and CAROLYN E. GRAY, R.N. New York: The Macmillan Company, 1918.

The fifth edition of this intelligent presentation of the subject of anatomy and physiology of the human body is now ready. The main object in the new revision is the basic importance of physiology. This is constantly borne in mind throughout the book. The approval with which the previous editions have been received leaves little more to be said. Those who are already familiar with the efforts of Miss Kimber and Miss Gray have taken advantage of this textbook, which is a most satisfactory one from the viewpoint of the instructor as well as the pupil

of anatomy and physiology. For the pupil nurse this volume is unquestionably a valuable possession. It is necessary for a student to have the clearest possible conception of a subject as her study progresses and it is also necessary that an instructor shall have a simple and progressive method of presenting his subject. This book serves both purposes well. Because the authors believe that every teacher will wish to follow his own method of teaching, no attempt has been made to change the arrangement of chapters in this edition. Each chapter is replete with excellent illustrations and a summary table of the topics discussed is added at the end of every chapter. A glossary of terms used throughout the text serves as a further aid in explaining the very clear discussion of the various structures and functions of the body.

American Red Cross Textbook on First Aid. (Woman's Edition.) By COL. CHARLES LYNCH, M.C., U.S.A. (2d Edition.) Philadelphia: P. Blakiston's Son & Co., 1918.

Since the first publication of a woman's edition of this handbook in 1913, many thousands of women all over the United States have learned the great importance of immediate, intelligent treatment of the sick or injured in the absence or until the arrival of a physician. In practically every city and town, classes have been formed and instructed by authorized physicians who have endeavored to teach inexperienced women just what "First Aid" treatment embraces. It is a difficult matter to state exactly how far an inexperienced person should press her treatment, but a great many times serious results can be averted by reference to this manual of First Aid; where the author has tried to omit everything not strictly "first aid." As a textbook in Red Cross classes this book has been taken as a general guide by instructors who modified or amplified their interpretation of the text as suited to the individual idea of presentation of the subject. No change has been made in the arrangement of chapters in this second edition. The treatment is still grouped under the following headings: General directions for giving First Aid, description of the simple bandages, fractures, wounds, hemorrhages, injuries due to heat and cold, artificial respiration, poisoning, common emergencies, carrying, and home preparation for sick and injured. A new chapter has been added at the end entitled "War First Aid," including a brief description of war injuries, aid organization and the part women have played in preparedness. This chapter will prove of especial interest to the First Aid graduates as well as to those who have doubted the benefits of the First Aid training in civil communities. Thirty-one plates illustrate the text throughout. Several new ones have been added and many of the old plates have been enlarged.

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RED CROSS UNIVERSAL HEALTH MOVEMENT.

EXECUTIVES of the Red Cross organizations of France, Great Britain, Italy, Japan, and the United States are in conference at Cannes, France, preparing a program for universal health improvement to be submitted to a congress of Red Cross delegates to be held at Geneva under the auspices of the International Committee of the Red Cross, thirty days after the treaty of peace shall have been signed. The campaign contemplates a world movement for the prevention as well as the relief of distress. Information recently received from the national headquarters of the American Red Cross outlines the plans for this universal health movement:

Leading experts in public health, tuberculosis, hygiene, sanitation, and child welfare work from all parts of the world are now in Cannes or on their way there, summoned to help the committee prepare the plans which will be submitted at Geneva. Measures for handling

problems of world relief emergencies will, as a matter of course, have a large share of the program, but much of the effort will be directed not only toward relieving human suffering and distress but towards preventing it.

The governments of the five powers are in sympathy with the movement, and other nations with Red Cross organizations or relief societies are expected to follow the relief of Japan, Italy, France, England, and the United States. This being the case, a few facts concerning the Red Cross of the various countries should prove of interest.

The International Red Cross Committee at Geneva—the parent of all Red Cross organizations—is the body through which the world program will be carried out. A permanent staff of health and relief specialists is to be maintained at Geneva following the world congress.

Geneva will be the place to which each organization will forward all information that may be of value to the others, and where research work having for its object the best means of preventing and combating disease and minimizing distress will be continuous. The International Committee of the Red Cross of Geneva was organized in 1863.

Because of its great achievements in the World War, the American Red Cross has been accorded leadership in the world movement by the Red Cross of other countries. The organization now has a membership of 17,000,000 adult and 9,000,000 junior members, this imposing total being divided among 3,864 chapters and thousands of branches and auxiliaries, no part of the country being too remote to be without its Red Cross organization. Dr. Livingston Farrand, who will direct the part the American Red Cross is to play in the universal program, is now at Cannes.

The Red Cross Society of Japan was organized in 1886 and now, with a membership of more than a million and a half and a splendid equipment, ranks as one of the foremost relief organizations. Always in the vanguard of humanitarian activities, the Italian Red Cross was never stronger than it is today after the great struggle in which it played such a heroic part. At the end of 1918, the organization had more than 300,000 members. Its complete coöperation with the American Red Cross at a critical juncture of the war proved a great help to the Allied cause.

France's Red Cross is made up of three distinct societies with a combined membership of about 250,000. It dates back to 1865. During the war it provided more than 50,000 nurses of all classifications and more than 1,400 auxiliary hospitals with a total of 117,000 beds. At the end of last July it had assets valued at more than \$21,000,000.

With headquarters in London and flourishing branches in Canada, Australia, India, and South Africa, Great Britain's Red Cross met every test of the four years' conflict. It is one

of the best organized and equipped among the societies that are planning for the future betterment of mankind.

Russia, up to the time of the Emperor's overthrow, had a capable Red Cross Society, the efficiency of which was impaired to a great extent by the class troubles that eventually culminated in the present chaotic condition of the country. The Red Cross organizations of the Central Powers and their allies, Turkey and Bulgaria, are expected to join the movement.

As is generally known, the German Red Cross and the Austria-Hungary Red Cross were organized along the same thorough lines as the military machines of those countries, being in fact part of those machines. Because of their complete domination by the military authorities, they were regarded by the outside world as being out of harmony with the merciful spirit of the Red Cross. The relief organization in Turkey was known as "The Turkish Society of the Red Crescent," that in Bulgaria as the Bulgarian Red Cross. More than likely what is left of the organizations in these countries will be represented at Geneva.

Belgium has a Red Cross organization. So has Switzerland, the birthplace of the man who conceived the idea back of the Red Cross. The emblem of the Red Cross is the Swiss flag reversed, a tribute to the country which has done so much to stimulate relief work throughout the world. The organization has about 50,000 members.

Holland, Denmark, Norway, and Sweden to the north, and Spain and Portugal in the south of Europe are all members of the Red Cross family. All the Balkan states have relief societies. China has had one since 1904. Mexico, Central America, South America—these countries have their quota of organizations.

DIPHTHERIA CAMPAIGN.

To augment the work that the local boards of health of the various cities and towns of this State are doing to reduce both the morbidity and mortality of diphtheria, the Massachusetts Department of Health has started an educational campaign endeavoring to bring home to the minds of the people of this State the fact that diphtheria is causing a large percentage of deaths each year and that it is a needless waste of life.

Emphasis is laid upon the fact that in diphtheria we have all the agencies necessary for its eradication, save two: the greatest factor lacking is the time lost before the physician is called in to care for "sore throats," and secondly, in a lesser degree, the non-use of the various

specific diagnostic aids and therapy, furnished by the department, by some physicians.

The plan of this educational campaign is one of publicity. School children have had given to them bulletins dealing with diphtheria and its prevention. All organized health agencies such as women's clubs, visiting nurse associations, associated charities, parent-teachers' associations, as well as the pastors of the various churches, have been asked to spread this gospel of health, thus augmenting the work carried on by the local boards of health. As much newspaper publicity as is available will be used and special talks will be given by the district health officers when desired.

Already requests have been received from some women's clubs, who are holding a "Health Meeting," and apparently more will follow.

The assistance and coöperation of physicians are solicited to help reduce the incidence of this disease.

WORK OF THE VOLUNTEER MEDICAL SERVICE CORPS.

The Council of National Defense authorizes the following statement:

Characterizing the work of the Volunteer Medical Service Corps and the Medical Section of the Council of National Defense as "a very striking demonstration of the American spirit," Dr. Edward P. Davis, president of the corps, paid tribute to the patriotism of American civilian doctors at the final meeting of the Central Governing Board of the Corps held in Washington, March fourteenth, prior to the termination of its war time activities, April 1.

A report submitted at the meeting showed that nearly 70,000 applications have been received from physicians for membership in the Corps, of which 56,540 had been received and coded prior to the signing of the armistice, November 11, 1918. Qualifications of these civilian doctors, classified and coded on cards, will be placed in the Library of the Surgeon General of the Army, where they will be accessible to all government departments for all time to come. With the approximately 40,000 medical officers additional, who are in the Army, Navy, and Public Health Service, practically all the able-bodied, eligible doctors of the country will be listed, available for the

nation's needs. Usually there are said to be about 150,000 physicians in the United States, but this total includes a large proportion of superannuated, disabled, or ineligible.

Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, expressed his warm appreciation of the co-operation he has received from the medical profession of the country and his firm belief in the value of the records of the Volunteer Medical Service Corps.

Dr. Davis said, in part: "This Volunteer Medical Service Corps and the work of the Medical Section of the Council of National Defense has been a very striking demonstration of the American spirit in more ways than we have imagined. I have always thought of a remark made by the President when the whole thing was in full swing, just about the time the nation had gotten its stride. He said that the men who were staying in this country were having the hardest time. That was true. You take the medical men who actually went into service. Of course, some of them did office work in Washington, but the men whom I know who have been in the camps here—whether they got to Europe or not—say they have had the time of their lives.

"One man, my assistant, said: 'I am just coming back from a year's freedom from responsibility, except for the immediate performance of my duties.' Another man, who is probably the best x-ray man in the Army, said his career in the Army has been the happiest time he has ever known, because he has worked scientifically without interruption. They had the privilege of being free to concentrate their minds on duty, and I think the remark made by Dr. Studdiford in New York the other night is to the point—that there has not been in the past year in the practice of medicine in the United States one single easy, pleasant, satisfactory thing. He said he hoped he would never have to live to go through another such year.

"When you consider the burden thrown upon the profession of this country by the shortage of resident membership, taking away assistants, nurses, laboratory men; the influenza epidemic, with the consequent increase in morbidity and mortality, and the strain upon the population which is now showing itself—it has been a most hectic war season. I don't think any profession has met a similar crisis

in civilization as nobly as did the American profession, and no small part of the moral value and success of the profession was due to this Corps. The fact that we had a Corps where the men could record themselves who did not go to the front had an enormous moral value.

"I personally desire to testify to the pleasure it has been for me to do what I have done. And I have sincerely appreciated the honor which has been given to me."

To about 13,000 doctors whose applications for membership in the Volunteer Medical Service Corps had been received before the armistice was signed, but which had not been acted upon by their state committee, now dissolved, Dr. Davis is sending the following letter:

From: Volunteer Medical Service Corps,
Council of National Defense.

To: Applicants for membership.

1. With the cessation of hostilities subsequent to the signing of the armistice, the Council of National Defense, under which the Volunteer Medical Service Corps was organized, asked that the activities of that Corps be terminated; and Surgeon General Ireland of the Army requested that the valuable records of the Corps be given place in the Library of the Surgeon General where they will be maintained permanently for reference by the various Government bureaus.

2. Your application for membership in this Corps, we regret to say, was not acted upon by your State and County committees before those committees were automatically released and, therefore, we are unable to complete your membership by furnishing you with the visible evidences of your tender service, *viz.*, the insignia and certificate of the Corps. We wish you to know, however, that your patriotic offer of service to your Government has been received and your qualifications as outlined on the Volunteer Medical Service Corps application blank have been transferred to permanent code cards which are to be preserved as an important record of the war.

3. We also wish you to know that those who have had the responsibility of organizing and enrolling the medical profession of the country appreciate the value of your offer of service and thank you for it from the bottom of our hearts. This includes the Secretary of War, who presides over the Council of National De-

fense, which authorized the Volunteer Medical Service Corps, the Secretaries of the Navy, the Interior, Agriculture, Commerce, and Labor, the members of the Council, and the President of the United States who appointed the Council of National Defense and who definitely approved the Volunteer Medical Service Corps in the following words: "I am very happy to give my approval to the plans which you have submitted, both because of the usefulness of the Volunteer Medical Service Corps and also because it gives me an opportunity to express to you, and through you to the medical profession, my deep appreciation of the splendid service which the whole profession has rendered to the Nation with great enthusiasm from the beginning of the present emergency."

4. Finally, may I express to you on behalf of the Central Governing Board of the Volunteer Medical Service Corps its personal thanks for your generous response to its request for an offer of your services at a time when it appeared they would be so urgently needed by the nation.

EDWARD P. DAVIS, M.D., President.
Volunteer Medical Service Corps.

MEDICAL NOTES.

RED CROSS NURSING SURVEY.—The Bureau of Nursing Service of the Red Cross has received more than 150,000 signed questionnaires from nurses. The survey has been made in order to record every woman who is able to take care of the sick, and it has demonstrated its value by providing nursing care for a large number of influenza patients who otherwise would have been obliged to go without aid. In Cleveland, the number of influenza cases cared for by the Visiting Nurses' Association in November and December increased four hundred per cent., and this is only one example of what has been accomplished throughout the country. The data collected will be invaluable in the future, and will be utilized to its highest efficiency. There has developed as a result of this study a nation-wide educational campaign in connection with public health work. The *Red Cross Bulletin* urges all nurses who have not yet signed and returned their questionnaires to realize the necessity and importance of their cooperation.

PUBLIC HEALTH SCHOLARSHIPS. The *Red Cross Bulletin* announces that \$100,000 has been appropriated to be used for Public Health Service funds, to equip graduate nurses who will soon be released from military service to enter public health nursing. The maximum scholarship for an eight months' course of training will be \$600, and for a four months' course, \$300. In addition to this scholarship fund, the Red Cross has established a loan fund of \$10,000 for the same purpose.

INFLUENZA IN MARYLAND.—In order to learn as accurately as possible the proportion of the population which has been affected by influenza, the United States Public Health Service has organized special surveys to be conducted. In a recent issue of the Public Health Reports, preliminary statistics of the surveys of the influenza epidemic in Maryland have been published. Surveys were made in Baltimore, Cumberland, Lonaconing, Frederick, Salisbury, and in three rural districts. In each of these localities house-to-house canvasses were made in a number of areas. Persons who were said to have been only "feeling badly" or as having a "cold" were recorded as "doubtful" cases. Cases lasting not less than three days, severe enough to confine the patient to bed for the whole of one day, were classed as influenza, unless otherwise diagnosed by the attending physician. The total number of persons in all localities canvassed included 46,535; of these, it was found that 13,037 had influenza, and 243 had died either from influenza or pneumonia, giving a death rate of 5.2 per thousand of population. The report includes tabular records of cases, localities, fatalities, age and sex incidence. It is possible that these preliminary statistics may be subject to certain errors, but they are not sufficient to be of material significance.

DEATHS FROM INFLUENZA AND PNEUMONIA.—A tabular record of the registered deaths from influenza and pneumonia (all forms) in thirty-one large cities of the United States during a period of twenty-five weeks from September 8, 1918, to March 1, 1919, is published in a recent Public Health Report. In New York, there have been 31,960 deaths from influenza and pneumonia; in Philadelphia, 15,566; in Chicago, 13,176; in Boston, 6,183; in Pittsburgh, 5,698.

INFLUENZA IN ENGLAND.—The epidemic of influenza has again reached serious proportions

in England, especially in the northern districts, and there are so few doctors and nurses that it is not possible often to give patients even casual attention. One general practitioner has recorded that in one day he treated ninety-six private patients and one hundred public patients. Only fifteen hundred of the eleven thousand doctors in the Army last November have been demobilized, and of twenty-three thousand nurses only three thousand have been released.

UNITED STATES MEDICAL CASUALTIES.—The War Department has announced that among American medical officers in France from the time of the arrival of the first units to March 13, casualties numbered 442. The statement shows that 46 died in action, 22 died of wounds, 12 of accidents and other causes, 101 of diseases, four were lost at sea, seven missing in action, 38 taken prisoner, and 212 wounded in action.

AMERICAN FUND FOR FRENCH WOUNDED.—The American fund for French wounded has now reached a total of \$501,584.34.

BELGIAN RELIEF FUND.—The Belgian Relief Fund has reached a total amount of \$731,745.69.

NURSES FOR UNITED STATES HEALTH SERVICE.—Under a new arrangement, graduate Red Cross nurses are to be supplied to the United States Public Health Service, which will be extended and will take over hospitals for the care of sick or injured members of various Federal services, including the merchant marine. The number of Red Cross nurses in this work is to be increased from seventy to seven hundred and fifty.

DR. LIVINGSTON FARRAND.—Dr. Livingston Farrand, chairman of the central committee of the American Red Cross, sailed for France on March 9, to study the Red Cross organizations' problems in Europe, and to confer with American health experts and representatives from allied countries about matters which will be discussed at the meeting which will be held at Geneva thirty days after the declaration of peace.

INFLUENZA IN GREAT BRITAIN.—The following account of the renewed outbreak of influenza in the north of Great Britain has been pub-

lished in a recent issue of the *British Medical Journal*:

"The only Scottish figures at present available refer to the week ending February 15th. The death rate from all causes for the sixteen principal towns was equivalent to an annual rate of 32 per 1,000, the highest experienced since the present statistical grouping was adopted (in 1913), and 8.2 above that of the previous week. The nearest approach to this figure was 30.5 in the week ending November 2nd, 1918. The highest rate was in Edinburgh (51.6), the Glasgow rate being 31.6, and that of Dundee 23.8. The English data carry the record down to the week ending February 22nd, and show that the large increases have (excepting London) been confined to certain northern cities. Of these, the most striking are at Newcastle-on-Tyne, which returned 163 deaths last week (119 the previous week), at Liverpool with 188 deaths (148 in the previous week), at Manchester with 130 (44 the previous week), and at Bradford, 141 (50 the previous week). Stoke-on-Trent, Bolton, Salford, Leeds, and Sheffield also show considerable increases. The deaths from influenza in London for the week ending February 22nd numbered 653, but the increase is not so large as would have occurred had the development followed a similar course to that of the autumn recrudescence, since, as we pointed out last week, on that hypothesis the figure would have been 924. It is too early to say that the figures for the south afford grounds for optimism, but the actual position is rather less grave than might have been feared, although the state of affairs in the north is disquieting."

BOSTON AND MASSACHUSETTS.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

On March 24, 9 cases of influenza and 3 of pneumonia, with 3 deaths from pneumonia, were reported to the Boston Health Department. On March 25, there were reported 16 new influenza cases and 6 of lobar pneumonia, with 7 deaths from pneumonia. There were no deaths from influenza on either day. Ten influenza cases, with no deaths, and 6 cases of pneumonia with 2 deaths, were reported on March 26.

On March 27, 15 new cases of influenza with 3 deaths, and 6 cases of pneumonia with 5 deaths, were reported to the Boston Health Department. Twelve new influenza cases and 4 of

pneumonia were reported on March 28; there were no deaths from influenza and only 1 from pneumonia.

WEEK'S DEATH RATE IN BOSTON.—During the week ending March 29, 1919, the number of deaths reported was 239, against 250 last year; with a rate of 15.65, against 16.62 last year. There were 33 deaths under one year of age, against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 38; scarlet fever, 66; measles, 17; whooping cough, 11; typhoid fever, 3; tuberculosis, 45.

Included in the above were the following cases of non-residents: Diphtheria, 3; scarlet fever, 3; tuberculosis, 3.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 1; tuberculosis, 20.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 2.

NEW HOSPITAL IN BOSTON.—A new hospital for the treatment of pneumonia and influenza cases, which will be called the Brooks Cubicle Hospital, will be built on Corey Hill within a few weeks. \$125,000 has already been subscribed without public solicitation by laymen who felt the need of such an institution. Patients who cannot afford to pay for treatment will be admitted without charge. Workers from factories, mills, and crowded shops, and people who would ordinarily die from neglect, will be especially welcomed at the hospital, and will have at their disposal the services of the best specialists of the city.

The Brooks Hospital will have at its disposal the Sial Laboratory. The doctors who have volunteered their services are: Dr. William A. Brooks, for whom the hospital was named. Dr. Henry L. Houghton, Dr. Augustus S. Knight, Dr. T. M. Snow, and Dr. T. M. Durrell. Dr. Brooks is reported to have made the following remarks:

"Our ignorance of influenza and pneumonia should be our spur to knowledge. Nor will it do for doctors or for any citizens, with pity in their hearts, to sit back now the plague has apparently abated, hoping for the best. It is just as well to prepare for the worst. Influenza, which started at Chieopec Falls last March, slept until August. So let us prepare.

"Last fall we know that those most grievously afflicted were people who lived in congestion

and worked in congestion—people who had too little chance and money to get well in decent hospitals. That is why we are making our cubicle hospital the most democratic hospital in the country.

"Previous tent hospital experiments have proved that pneumonia generally gets well, that influenza far less rarely is fatal if treated in the open air. Tents are impossible in winter, but good wooden structures, with kitchens attached, where hot food may be cooked, diet kitchens and hospital personnel kept warm, make an all the year round open air hospital a simple matter."

THE CUTTER LECTURES ON MEDICINE.—The Cutter Lectures on Preventive Medicine, by Dr. Alice Hamilton, Special Investigator of the United States Department of Labor, Chicago, on "Industrial Poisoning in the United States," were held at the Harvard Medical School on April 2, 3, and 4. The subject of the first lecture was "Lead," of the second, "Other Organic Poisons," and of the third, "Poisons of the Aromatic Series and of the Fatty Series."

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press.

NEW ENGLAND NOTES.

MAINE MEDICAL INSPECTION OF SCHOOLS.—The Maine committee on public health has reported to the Legislature in a new draft an act providing for the medical inspection of school children. It provides that it shall be the duty of all towns and cities in the State having a school enrollment of more than 1,000 pupils to install medical inspection of school children and to provide school nurses on or before the close of the year 1920; of all towns and cities with a school enrollment of 500 before the year 1921; and of all towns and cities having a school enrollment of 300 or more, before the year 1924.

APPEAL FOR FRENCH HOSPITAL FUND.—The New England headquarters of the American fund for French wounded has been notified that there are now five thousand refugees in Rheims and there is no hospital to provide for their care. It is expected that there will be twenty-

five thousand refugees in Rheims by July 1. The fund has been given a building for a temporary hospital of forty beds; the American fund for French wounded plans to carry on this temporary hospital until the permanent hospital is completed, and it earnestly appeals for help in its effort to raise the necessary endowment fund for the hospital.

Obituary.

WILLIAM WRIGHT WALCOTT, M.D.

Word has been received of the death of Captain William W. Walcott of Natick, in France, March 16, 1919. Dr. Walcott was 39 years old and a graduate of the Newton High School and the Massachusetts Institute of Technology in 1901, receiving the degree of S.B. Harvard University gave him an M.D. in 1905 and subsequently he was a house officer at the Massachusetts General Hospital, settling in practice in Natick and joining the Massachusetts Medical Society in 1906.

Up to the beginning of the war Dr. Walcott was district health officer under the State Department of Health, a most efficient official. Military duty was inaugurated with the First Corps of Cadets of which he was medical officer. He went overseas as first lieutenant of the 101st engineers and was made a captain in the medical corps last summer. After passing a month at a base hospital he took part in the battles of Chateau-Thierry, Chemin des Dames, St. Mihiel, and was at Verdun for six weeks. He was once wounded by a fragment of shell and was gassed. He had expected to return with the 26th Division. Dr. Walcott was unmarried.

NICHOLAS E. SOULE, M.D.

DR. NICHOLAS E. SOULE died at his home in Exeter, New Hampshire, on March 26, at the age of ninety-four years. Dr. Soule was born in Exeter in 1825. At the age of ten he was a student at Exeter Academy, where his father, Professor Gideon Lane Soule, was principal. He graduated from Harvard Medical School in 1848, and then studied medicine at the University of Pennsylvania, from which he received his degree in 1851.

Dr. Soule practised medicine in Cincinnati for several years, but an opportunity to teach

in a private school in that city led him into the teaching profession. At the time of the Civil War, ill-health prevented him from serving as a soldier, but he volunteered and was accepted for the United States Sanitary Commission. He was present at the battles of Lookont Mountain and Missionary Ridge.

After the war he returned to his teaching and in 1886 was married to Dr. Lucy Weaver of Provincetown. Dr. Soule retired a few years ago and remained active until a short time before his death.

For several years Dr. Soule had been the oldest living alumnus of Harvard University and of Phillips Exeter Academy.

The Massachusetts Medical Society.

THE next annual meeting of the Massachusetts Medical Society will be held at the Copley-Plaza Hotel, Boston, June 3 and 4, 1919.

The following officers of the sections were elected by the sections for the year 1919:

Section of Medicine: *Chairman*, George A. Bancroft, Natick; *Secretary*, William David Smith, Boston.

Section of Surgery: *Chairman*, Howard A. Lothrop, Boston; *Secretary*, Hilbert F. Day, Boston.

Section of Tuberculosis: *Chairman*, Henry D. Chadwick, Westfield; *Secretary*, E. O. Otis, Boston.

Section of Hospital Administration: *Chairman*, George G. Sears, Boston; *Secretary*, Channing C. Simmons, Boston.

Chairman of Committee of Arrangements, J. L. Huntington, 311 Marlborough street, Boston.

Chairman of Committee on Scientific Papers for Meeting of Society June 4, F. T. Lord, 305 Beacon street, Boston.

SOCIETY NOTICES.

NEW ENGLAND WOMEN'S MEDICAL SOCIETY.—The New England Women's Medical Society will meet at the home of Dr. Helen I. Woodworth, Hotel Cluny, 543 Boylston St., near Clarendon St., Boston, on Thursday, April 17, 1919, at 8 P.M.

PROGRAM.

Exercise in Surgical Diagnosis.	Dr. Agnes C. Vietor.
Case Report.	Dr. Mary T. Mernin.
Case Report.	Dr. Marion Nute.
Obstetrics in India.	Dr. Katharine B. Scott.

ALICE H. BIGELOW, M.D., *Secretary*.

CENSORS' MEETING.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 1, 1919, at 4 o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least two weeks before the examination.

GEORGE R. MINOT, M.D., *Secretary*.

The Boston Medical and Surgical Journal

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Original Articles.

THE CLOSE RELATIONSHIP EXISTING BETWEEN THE GENERAL PRACTITIONER AND THE OPHTHALMOLOGIST AND OTO-LARYNGOLOGIST.

By T. H. ODENEAL, M.D., BEVERLY, MASS.,

Ophthalmologist and Oto-Laryngologist to the Massachusetts State Infirmary.

ALTHOUGH the general physician of today is, as a rule, well read, it is a physical impossibility for him to read all the journals published, first, because it would be a financial load of no mean proportions; secondly, because of the infrequent appearance in the journals for which he is subscribing of the subjects on which my paper is based; and thirdly, because of the paucity of information and references to these subjects in the text books on the practice of medicine, he is often in ignorance of the relations existing between certain general symptoms and the diseases of the anatomy of eye, ear, nose, and throat.

It seems, therefore, that a paper dealing with those symptoms (in concrete form) which oftentimes have their origin in the eye, ear, nose, or throat, will be of value both to the physician and the patient, and indeed it is at the instigation of a well-known physician that I offer this article.

Certain symptoms ordinarily looked on by the physician as some general disturbance of the metabolic, systemic, or nervous function of the body, may be traced to an affection of the particular anatomical point dealt with by the ophthalmologist and oto-laryngologist.

In consideration of the particular parts involved, I will take them up in consecutive order.

THE EYE.

Refractive and Muscular Errors—Due to complex anastomoses of the sensory and sympathetic nerves of the eye, reflex disturbances originating in the eye are very common.

Gastric and Intestinal Disorders: A patient visits the doctor complaining of nausea and vomiting, constipation, dizzy spells, seeing double at times, loss of appetite, headaches, with consequent malnutrition. Various remedies are prescribed, lavage practised, test meals given, diet, tonics, and fresh air prescribed, with some improvement, but of short duration. A diagnosis of nervous indigestion is perhaps made, and the patient allowed to drift, until seen by a more advanced physician, who orders the eyes examined, when a muscular or refractive error is perhaps disclosed, glasses or muscular exercises prescribed with relief of the symptoms.

Lack of proper digestion and a flatulent

condition of the intestine are often present from eye strain.

Nervous System: Extreme degrees of nervousness bordering on insanity are sometimes present. Hysteria in children is often relieved by correction of refractive errors. School children with only slight errors sometimes are very nervous, cannot remain long seated, are constantly moving about or wishing to play, and cannot concentrate long on one thing, for example, their studies. Convulsive attacks occasionally occur. There is pain in the eyes or reflexive pains in remote parts of the body, nervous twitchings of eyes, fingers, or lips, and squinting. Masturbation in children, in my opinion, is occasionally caused by refractive errors. Various habits, which the mother attempts to correct in the child, such as snuffling, sucking the thumbs, picking the nose, etc., can often be laid to the eye. Neuralgia, unilateral, of orbit or temporal region, may be complained of by adults. Painful spots on the head, tender to the touch, are met with. Headaches are common, but may be absent, generally localized in the frontal or occipital region, usually worse as the day advances, but often present on arising in the morning. Close work (reading, embroidery) aggravates or brings it on. Dizzy spells are complained of frequently and may come on while in the act of stooping or arising suddenly, or when observing something closely, as, for example, attempting to read the name of a street on an approaching car. A person will be attacked suddenly while walking on the street. Entering a lighted room from a dark one may bring on an attack of dizziness.

In the cases of muscular imbalance the vision may be perfect, also in a great many of the refractive error cases the patients may aver that they see perfectly. Children, previously healthy, may gradually become morose, disinterested in all children's pastimes, lose their appetite and fall off in weight, a physical examination producing nothing abnormal, tonics being prescribed, and the child withheld from school, without any improvement, a simple refractive error being the fault.

Glaucoma: In this disease (increased intraocular tension) the patient complains of headaches which are often violent, commonly called "migraine" (some oculists even go so far as to say that all cases of migraine are due to an increased intraocular tension), but may be very slight or absent. Usually the headache

is very frequent or constant and generally deep seated behind the eyes. Seeing spots or flashes of light before the eyes is often complained of, or a halo about a light is noticed with a ring of colors. The vision gradually diminishes, a film appearing before the eyes. Passing acquaintances without recognizing them (due to the narrowed fields of vision) is complained of. This disease results in blindness, if allowed to continue, and should be recognized at the earliest possible moment.

Miscellaneous: Disease of the endocrinous glands is closely allied with the eye, especially the disease known as goitre. The ophthalmologist is in a position to recognize goitre long before any general diagnostic symptoms are manifested. In this disease such eye symptoms as Stellwag's, Moebius', Gifford's, Kocher's, von Graefe's, Mueller's, Joffroy's, and exophthalmos may be present, some of them presenting the earliest symptoms. Hemianopsia and optic atrophy are sometimes present. Many of the cases of choroiditis seen by the ophthalmologist are early signs of goitre before other manifestations present themselves.

Paralysis of the ocular muscles and changes in the fields of vision (perimetric examination) are of particular assistance in localizing brain tumors or abscesses, and often are the only indications of the disease. Pupillary reactions and fundus changes are sources of great help as well.

Affections of optic thalamus with the consequent symptoms such as sensory disturbances, hemiataxia, etc., are well nigh impossible of diagnosis without the aid of the ophthalmologist.

The diagnosis of disease of the hypophysis is aided very much by the examination of the eye grounds, whether of the hypo- or hyper-pituitarism type or a mixture of the two (the most common). Symptoms such as acromegaly, gigantism, asexual development, headaches, stupor, lack of mental development are usually present.

In tabes, palsies of the various eye muscles may occur (20% of cases) temporarily, to disappear and return again at a later date. Eye examination should be advised on suspicion of tabes. Diminution or loss of color perception are early signs of optic atrophy which accompanies about 10% of these cases. The Argyll-Robertson pupil occurs in about 80% of cases. Irregularity and inequality of the pupil are early signs.

THE NOSE.

Maxillary Sinus: Disease of this sinus is generally easily recognized, and therefore I will dismiss it with a few remarks. An acute attack is often mistaken for an abscessed tooth. The pain is sometimes referred to the ear, which may be the only sign of pain; tenderness over the infraorbital area is present. In chronic cases the pain is negligible except when the drainage is prevented from any cause. A febrile rise in temperature may occur in the evenings, resembling hectic fever, this being due to absorption of toxins from the pus present; this type of sinusitis often remains unrecognized. A discharge of pus from the nose is usually present. A neuritis of the side of the face may be complained of, no other symptoms manifesting themselves, the second branch of the fifth nerve being the one affected. A vacuum disease of this sinus is described, causing reflex pains or neuralgia in the teeth, orbit, or throat, etc., or a hacking cough.

Frontal Sinus: Headache, unilateral or bilateral, usually appearing about 10 o'clock in the morning, is complained of, aggravated by stooping. Pus is discharged from nose at intervals if in the purulent stage. In acute cases the pain is severe, sometimes resembling the incipient stage of herpes ophthalmicus and the bone is tender to pressure over the supraorbital area. Vision may be disturbed. In the chronic cases the patient becomes anemic and neurotic, of an irritable temperament and complains of a bad taste in the mouth, and the digestion is disturbed. These chronic cases sometimes lead to suicidal mania.

Ethmoids: In disease of these cells a chronic cold is present, pus is discharged from the nose (except in the hyperplastic cases). Reflex disturbances are common. Pain may be present in the eye of that side, and visual disturbances with their consequent train of symptoms as explained under refractive errors, headaches, or neuritis occur. A case is reported of violent colicky pains resembling appendicitis as having occurred due to the retention of pus in the cells. Absorption of toxins from the pus may cause disease in remote parts of the body, as rheumatism, nephritis, and bronchitis. Nervous disturbances, in children especially, may occasionally be laid to this disease. Stomach disturbances are common, due to swallowing the discharge from the nose. Hay-fever and cutaneous rashes

may have their cause in diseases of these structures.

Disease from focal infections is caused in one of three ways: First, by metastasis of pathogenic germs from infected foci; second, by absorption into the circulation of bacterial toxins; and third, by disturbance of vasomotor balance, either through mechanical irritation or toxic action of bacterial poisons.

Sphenoidal Sinus: This sinus is situated in the body of the sphenoid with openings into the superior meatus of the nose. The roof of the sinus is very thin and has coursing along and internal to it the cavernous sinus enclosing the internal carotid artery, the third, fourth, and sixth cranial nerves, with the first and second branches of the fifth in close relation to the side of the sinus. The third branch of the fifth and the vidian are also sometimes closely related to it, due to the malposition of the sinus. The sphenoid is variable in size, one of the sinuses being almost absent occasionally, the other encroaching upon it due to its extraordinary size, being twice the normal at times. Again the sphenoid may be replaced by an enlarged ethmoid cell. The optic nerve is closely related to the sphenoid as is also the hypophysis. The sympathetic nerves supplying the upper part of the head are in close relation to this sinus, irritation of which causes vasomotor disturbances of the eye, nasal mucosa, etc. This sinus has been gaining in importance as the years go by, due, principally, to the untiring efforts of Dr. Sluder. The important part it plays in medicine should be known to the general physician. There may or may not be a suppurative condition of this sinus, a hyperplastic condition only being present at times without a discharge, which makes a diagnosis of disease of the sinus very difficult in such cases. Through erosions of the wall or roof of the sinus the various nerves mentioned above may be attacked, causing diminution of sight or blindness, partial or complete paralysis of certain eye muscles, neuralgia of the parts (teeth, upper and lower jaw, orbit, palate and side of nose or pharynx) supplied by the sensory nerves mentioned or the typical tic douloureux may be present. Headache, usually occipital or temporal, is generally present. The patient becomes extremely neurotic and the health is impaired. Absorption of the toxins or bacteria from the pus into the system may cause disease in other parts of the body

the same as from any other focus of infection, rheumatism, arthritis, etc., being the result. Anaphylactic reactions are often met with, causing skin rashes or other forms of irritation, as hay-fever, bronchitis, etc. Asthma, contrary to past belief as being of nervous origin, is now thought to originate from toxic reactions, thus forming the nervous condition found in asthma. These toxins are frequently of nasal origin—the anaphylactic reaction being produced by the proteid constituents of the bacteria or toxin present. This reaction is identical with that of the anaphylactic reaction obtained from the proteids of food, and just in the same way that we have to withhold the especial food causing the anaphylaxis, so do we have to eradicate the focus from which these organisms and their toxins are generated.

Meckel's Ganglion (spheno-palatine): There are two classes of symptoms met with from disease of the spheno-palatine ganglion: First, the facial and associated neuralgias of which the tic douloureux is the acme of the height to which neuralgias reach; and second, the hemi-cranias and deep occipital pains. The tic is a most dreadful disease, causing untold suffering, so much so that the patient is willing that any procedure be tried for relief of the attacks. I have seen as many as 15 injections made without the aid of anesthesia, the patient ever ready for more, notwithstanding the fact that the needle is introduced 4 to 5 cm. through the side of the face (where the fifth is injected). Twenty or thirty attacks may occur in a day, lasting from a few seconds to as many minutes or longer, the slightest jar or opening the mouth producing an attack. Meckel's ganglion, often the seat of the trouble, is situated in the spheno-maxillary fossa, is about the size of a pea, and is reached most easily through the nose for purposes of treatment. The pains or neuralgia may be present in the palate, throat, teeth, gums, or run from side of the face into the ear, neck, or orbit. Injections of carbolic alcohol give relief.

Deviations and Spurs of Septum of Nose: Frequently the cause of unilateral neuralgia and headaches are due to irritation of the mucous membrane of the nose from contact with consequent reflexive nervous irritation. This may manifest itself in hay-fever attacks or asthma, or in children of extreme nervous irritability. I have known cases with pain in eye running into the supraorbital area with congestion of the con-

junctiva of the eye, especially on accommodation, to be relieved by resection of a spur pressing into the mucous membrane of the opposite side of the nose, these cases having sought relief from various oculists, with consequent frequent changes of lenses without benefit.

Vagotonia Relating to the Nasal Sinuses: (Drawn freely from Hess and Eppinger, Fetterolf and Barke.) The fibres of the spinal nerves are divided into the animal and vegetative groups, the animal consisting of the sensory and motor fibers and supplying the organs of sensation and voluntary muscles; the vegetative, all the glands having ducts and all involuntary muscle tissue. The vegetative system consists of two divisions, the autonomic and sympathetic systems. The autonomic system arises from the brain and sacral region of the cord, the sympathetic from the cord alone. The fibres of the sympathetic have no names, but their supply is well known. The fibres of the autonomic, which arise from the brain, are contained in the third, seventh, ninth, tenth, and eleventh cranial nerves. Those from the cord are distributed through the sacral plexus. The action of these two systems is antagonistic, and they supply all glands with ducts and all involuntary muscles; therefore a normal functioning of the structures is dependent on the proper balance of the two systems. Irritation of the autonomic supply will cause hypersecretion and spasm; of the sympathetic,—hyposecretion and relaxation. These systems are controlled by the cerebro-spinal axis and the endocrinous glands. Adrenin stimulates the sympathetic system, and pilocarpin a part of the autonomic. Atropin acts as a sedative on the autonomic system. Where there is an excitation or irritability of the autonomic system pilocarpin injected in a small dose causes marked salivation, sweating, hyperistalsis of the intestine, etc. In suppurative conditions of the sinuses the toxins absorbed from the discharge may affect these systems as well as the animal system. In the animal system we get our palsies and sensory disturbances, as, for example, neuralgia of one of the branches of the fifth nerve. In the vegetative, we get spasm (of accommodation, for instance), or relaxation (dilatation of pupil) of the involuntary muscles and hyper (salivation, sweating) or hypo (dryness of skin, etc.) secretion of the glands supplied by the nerves already mentioned. In vagotonia the entrance to the

pharynx is anesthetic, according to Hess and Eppinger. A case is reported of abdominal pains, hypersecretion, nausea, and vomiting, and marked nervous irritability caused by supuration of the ethmoids, a typical case of vagotonia.

THROAT.

Faucial Tonsils: The tonsils are frequently the source of focal infection causing such diseases as rheumatism, nephritis, and arthritis (acute inflammatory, chronic, arthritis deformans). Pulling the anterior pillars forward may disclose inflammation when the tonsil appears normal. The lymphatic chain running from the epipharynx down behind the tonsils is often the seat of inflammation with consequent chronic sore throat. It is by this chain that infection is often carried to the ear. An enlarged tonsil does not always mean a diseased tonsil. The small, imbedded tonsil, which is the seat of frequent inflammatory changes, is the most dangerous tonsil. The best criterion for the removal of tonsils is frequent tonsillitis and I always advise against removal of the tonsils if they appear normal and if there have been no previous attacks, unless there is some disease of the system present which has followed a present attack of tonsillitis for which there is no accounting and which disease is known to follow tonsillitis. The typical infectious tonsil, which is always to be watched, is the small, submerged tonsil of a light purplish hue, ent up by adhesions and inflammatory bands, or the large oedematous, congested tonsil, with an irregular surface and hyperplastic bands of connective tissue dividing it, found in adults. The tonsil may contain cheesy material of a foul odor. Such tonsils cause malaise, and a feeling resembling what is called spring fever; also the stomach may be upset, with constipation present. In children, where there is a history free from attacks of tonsillitis or sore throat, the health of the children may be much benefited by removal, although no definite indication for such removal is present, a thorough physical examination having disclosed no ailment to account for the symptoms present. A tonsil which looks to be perfectly normal may contain a small fistulous tract leading to an abscessed cavity within the tonsil, which is found on incising the tonsil on removal. But, first of all, a clear dissection of the tonsil must be made in order to remove foci of infection in these cases, a small tag left behind causing

as much absorption as the whole tonsil sometimes.

Who has not seen the post operative adhesions of the tonsil bed from imperfect enucleation, with a collection of foul detritus, food particles decayed, absorption from which is as great a source of danger as from the tonsil itself? The percentage of valvular heart lesions met with in the adult, having their origin in the tonsils, is much greater than supposed, and recognition in time will prevent a permanent lesion.

The connection between the thyroid gland and the lymphoid ring is not understood, but it is known that the thyroid and the lingual tonsils spring from the same bronchial arch, and that in Graves' disease the lingual tonsils, as well as the faucial tonsils, should always be examined: for it is definitely determined that in diseased condition of either their removal often benefits or cures the thyroid gland disease. I will say that the sinuses should also always be examined in Graves' disease. The question is asked, does the thyroid enlarge to combat some infection? If this be true, then the explanation is clear why the disease is benefited by removal of diseased tonsils. Cases of meningitis and cerebral abscess have been traced to the tonsil. A history is often obtained of frequent attacks of tonsillitis with, finally, all the symptoms of an acute attack of nephritis, following the last attack, disappearing, to follow another attack of tonsillitis. Deafness is caused by diseased tonsils, the infection entering by contiguity or through the blood supply and lymphatics. Various nervous disorders occur, such as esophageal spasm, recurrent cough, spasm of glottis, neuralgia of tongue, and blepharospasm. I think that it is an accepted opinion that normal tonsils in children act as barriers to infection; but a tonsil once diseased is never of any service to the human mechanism, for the character of the tissue is changed, the epithelium of the crypts is replaced by a degenerated form, the original type never reappearing.

Lingual Tonsils: Are frequently the cause of chronic sore throat, hacking cough, with tickling in the throat, or tickling referred to side of the throat or neck.

Oesophagus: Pouches in the oesophagus cause food eructation, with sense of foreign body in food passage, pressure symptoms or fullness in that region, with sour stomach.

THE EAR.

As is well known, cerumen in the canal of the ear has been known to cause convulsions or semi-epileptic attacks in children; any irritation of the ear is just as liable to do this. A chronic enough through reflex irritation may have its origin in the ear from an eczematous condition or cerumen in the canal. After an attack of acute otitis media or during a chronic otitis media suppurativa on appearance of acute articular rheumatism, an infection of the lateral sinus must be looked for, the symptoms of the joint affection often overshadowing the ear condition and the ear being neglected to the danger of the patient, the patient succumbing to an intercurrent infectious endocarditis presumably, the sinus having been lost sight of. Thrombosis of the sinus is often overlooked because the symptoms in many cases are mild and the sinus escapes suspicion on the appearance of a pyogenic process in some other part of the body. Acute inflammatory joints are now thought to have their origin in metabolic changes and it is therefore possible to have such an inflammation from non-infectious sinus thrombosis where the symptoms are necessarily mild and easily escape detection by the family physician.

Vertigo often has its origin in the labyrinth, acute labyrinthitis causes marked vertigo, ataxia, nystagmus nausea, and vomiting. In the chronic cases, the vertigo is the prominent symptom, that and the deafness; the nystagmus usually can be elicited by having the patient turn the eyes toward the normal side, but it may be absent and the function of the labyrinth found to be impaired by turning, the caloric reaction, etc. The semi-circular canals may be destroyed and the hearing remain intact, although the hearing is generally involved at the same time as the semi-circular canals. Cerebellar abscess will cause vertigo and nystagmus with ataxia. Cysts of the dura (cerebellar-pons angle) will do the same, giving us a picture of labyrinthitis. Here we have headaches complained of, as noises in the ear are complained of in labyrinthitis. In cerebellar abscess or tumor, the patient may fall unconscious on the street, these attacks occurring with greater frequency as time progresses. The cerebellum is the center for coördination of joint movement (stabilizer), disease of one lobe allowing overproduction of movement of the joint (controlled by the center involved) of that side toward the

side involved. Separate centers exist in the cerebellum for the wrist, elbow, ankle, etc., and the location of the cerebellar disease can be fairly definitely determined through the joints involved. This is determined by pointing tests and coincident caloric reaction, the cerebellar disease being distinguished from labyrinth disease by this method also.

In this paper I have mentioned only those subjects with few exceptions which are not immediately apparent and with which the general practitioner does not concern himself especially but which should ever be before him in order that he may give his patient every chance to recover from an affection, the cause of which it has been impossible for him to determine by a thorough and painstaking examination.

POST-INFLUENZAL ALOPECIA.

By SAMUEL AYRES, JR., A.B., M.D. (KANSAS CITY)
BOSTON.

[From the Department of Dermatology, Massachusetts General Hospital, Boston.]

In view of the almost daily occurrence of cases of alopecia following influenza it would seem pertinent to sum up our knowledge of the subject. The general medical practitioner is just as likely to be called upon to treat this disorder as the dermatologist; in fact, in the smaller localities he is the only one to whom the patient can go. And the patient deserves due consideration and rational treatment. Baldness may not be serious from the point of view of life and death, but it is extremely serious to the young man or woman who is rapidly losing a good head of hair, and it must be remembered that during the recent epidemic, the incidence of disease was much more common among young people than among people past middle life.

In Massachusetts the height of the epidemic was reached in October. The first cases of post-influenzal alopecia which were seen at the Massachusetts General Hospital came for treatment on December 10, or about two months later. Between December 10, 1918, and January 18, 1919, 24 patients have been treated, all of them under 36 years of age, and all but three females. Just why there should be such a predominance of females is not clear. There are several possible explanations: (1) Males may

be less susceptible to post-influenzal alopecia; (2) post-influenzal alopecia may be less noticeable among men on account of the greater incidence of premature alopecia; (3) women and girls may be more anxious about the condition of their hair, whereas men and boys may not think the condition important enough to come to the hospital. In all but one of the twenty-four hospital cases the alopecia was of the diffuse type; in one of the hospital cases, and in the private case recorded, there were definite bald areas—alopecia areata. The time elapsing between the onset of influenza and the first intimation of alopecia varied from two to twelve weeks. (Allowance must be made for inaccuracy in the patient's memory as regards time of onset of influenza). Of those cases in which a time relation was recorded, practically as many occurred between the eighth and twelfth week after the onset of influenza as occurred up to the eighth week. In several instances the alopecia made its appearance during convalescence. Treatment of these cases consisted chiefly in the application of stimulating lotions and in the observance of scalp cleanliness. Insufficient time has elapsed to comment on results.

So much for statistics. It is to be hoped that further cases will be recorded in order to make a truly adequate study of the situation. Now let us briefly mention the nature of alopecia, the several types and the rational treatment. The literature is profuse and goes back to the days of the ancients. A large part of the writings are in tongues other than English. Hence it is easy to see that a complete résumé of the literature on baldness is out of the question.

There are a number of different types of alopecia—alopecia of old age, premature alopecia, alopecia with seborrhea, alopecia areata, toxic alopecia, etc. Various etiological factors have been cited to account for these several varieties of baldness, but as yet no definite conclusions have been reached which are capable of withstanding impartial criticism. In the alopecia of old age, Unna has found histologically an atrophy of the skin and hair follicles of the scalp. Sutton¹ has described a variety of premature alopecia characterized by a hide-bound scalp and a diffuse hair loss under the name of alopecia indurata atrophica, which shows histologically condensation of the connective tissue, atrophy of the hair follicles and

the epidermis, diminution, or absence of subcutaneous fat and a diminution in the number and size of the capillaries. Fewer bacteria were seen in the hair follicles than in two control sections from normal scalps. These atrophic changes described by Unna and Sutton may represent the end-results of an impaired circulation in the scalp, either from local or general causes. Writers have variously attributed premature alopecia, with or without dandruff, to (1) a superficial infection of the hair follicles; (2) the effect of wearing tight hats; (3) sedentary occupations, etc. Alopecia areata is said to be neurotrophic in origin and commonly to occur after mental strain, fright, etc. Toxic alopecia—and under this heading comes the particular type which we are studying—is said to result from the injury of the hair follicles either by circulating toxins or impaired nutrition.

At first glance it may seem that there is little connection between these varieties of baldness, yet there may be a very real connection, namely, the circulation. This view is far from being original, but it is surprising how little stress is laid upon it in the current textbooks on dermatology. Probably the most recent contribution to this aspect of baldness is a monograph by a non-medical man, G. S. MacLeod², who, bald himself while still a young man, determined to find out why some men become bald and others do not. After four years of reading and investigation he has published his results, which are based upon the careful measurements by means of a pantograph of over two thousand heads. His observations lead him to conclude that (1) men with smooth, oval foreheads become bald early in life, whereas men with flat foreheads, prominent supra-orbital protuberances or other cranial irregularities, as a rule, escape baldness. (2) This is due to the fact that smooth oval heads receive equal pressure of the hat-band at all points and this compresses the temporal arteries and veins laterally and the large frontal vein anteriorly, thus definitely impairing the nutrition of the scalp. Irregular or squarish heads receive the pressure of the hat-band at certain points only, particularly on the supra-orbital prominence, and this spares both frontal and temporal vessels from pressure. MacLeod brings out the important point which I believe has especial application to post-influenzal alopecia, that persons who lose their hair after an illness should

wear hats as little as possible, and if their heads are oval so that the hat fits closely at all points, small pieces of felt padding should be inserted under the hat band just above each eye, thus removing pressure from the frontal and temporal vessels; if necessary, additional bits of padding may be inserted above each ear. This will offer the most favorable opportunity for the nutrition and regrowth of hair in a scalp which has been damaged by the poisons of a disease.

MacLeod's conclusions regarding the cause of baldness in young men accounts adequately for the well-recognized inheritance of a tendency to baldness; in other words, the inheritance of a smooth, oval head. Many writers have mentioned the influence of the hat in the causation of baldness, but so far as I know nothing has ever been said in regard to the shape of the head; some men who never become bald wear hats just as much as, or more than other men who become bald early in life. W. J. Tyson,³ writing in the *Lancet*, 1891, emphasizes the exclusion of air by hats with sweating, as a cause of baldness. He seems to forget, however, that a person may preserve his axillary and pubic hair to a ripe old age and yet sweat profusely eighteen hours out of the twenty-four during warm weather.

Walsh,⁴ in the *British Medical Journal*, attaches importance to the condition of the general circulation in the etiology of alopecia. In speaking of the diffuse fall of hair seen not infrequently after an attack of influenza, he says: "Obviously, the predisposing factor of a weakened circulation would be commonly present in post-influenzal states. In the post-febrile stages of the exanthems, when hair commonly falls, the myocardium is, in most cases, affected, and there may be, of course, temporary or permanent valvular mischief. Premature baldness commonly dates from a febrile attack in early life."

Of thirty-six consecutive cases of alopecia areata which Walsh studied, twenty-four had valvular murmurs and other evidence of cardiac disease; three showed general arterio-sclerosis; one exophthalmic goitre; one chorea with irregular heart; two irregular hearts from tea and tobacco, and one a feeble circulation; three showed no abnormal condition of the circulation.

Walsh concludes that, given the predisposing cause of impaired circulation, baldness, either diffuse or patchy, may be precipitated by vari-

ous exciting causes, such as bacterial, chemical, physical, or mental, acting directly or indirectly.

Other well-recognized conditions of impaired circulation or disturbed nutrition with which alopecia is sometimes associated are surgical operations, anaemia, diabetes, cancer, tuberculosis, etc.

It cannot be said, of course, with certainty that the alopecias following the exanthems and influenza are due to a disturbance in circulation rather than to the direct influence of toxins on the hair follicles. In the case of syphilis, at least, it would seem that the alopecia which occurs some two months or more after infection is more probably due to a direct toxic action rather than to a circulatory effect. This whole matter however, would bear further investigation.

TREATMENT.

Whether the alopecia following influenza is due to toxins or circulatory disturbances, the fact remains that the best means of favoring a new growth of hair is to favor the circulation of the scalp to the best of our ability. New hairs are produced by the oxygen and other nutritive materials which are carried to the scalp by the blood stream. Lotions, ointments, massage, electricity, ultra-violet light,—whatever method is employed, the object is the same, namely, to stimulate the circulation, to produce hyperemia, to bring blood to the surface that the hair follicles may be nourished, and the epithelium stimulated to healthy growth. Some of the stimulating agents, such as resorcin, or bichloride of mercury, or electricity, may have a certain amount of direct stimulating effect upon the cells themselves, but probably by far the greater effect is by a stimulation of the circulation. It is, of course, desirable to keep the scalp clean and free from dandruff. With Walsh's view in mind, it would be desirable to examine the condition of the circulation, and if any heart damage is found, to institute cardiac hygiene. And with MacLeod's findings in mind, it would be well to warn the patient against wearing a hat more than necessary (this the patient is liable to do to cover up his baldness) and to insert paddings under the hat-bands at appropriate places, according to indications.

Massage is one of the most efficient and inexpensive means of stimulating the circulation of the scalp. This should be practised several times a day for five or ten minutes at a time.

TWENTY-FIVE CONSECUTIVE CASES.

CASE (PATIENT)	SEX	AGE	FIRST VISIT	LOSS OF HAIR FIRST NOTICED	PREVIOUS ILLNESS	EXAMINATION	REMARKS
359436	F.	21	Dec. 10, 1918	2 wks. ago	Influenza and pneumonia. Time not recorded	Scalp visible through hair. Hair short	Dec. 17, hair growing in Dec. 31, hair growing in
389296	F.	20	Dec. 10, 1918	2 wks. ago	Influenza 6 wks. ago	Scalp visible through hair. Hair short	Dec. 18, hair still falling
374028	F.	25	Dec. 11, 1918	6 wks. ago	Influenza 8-9 wks. ago	Diffuse thinning on top	
374344	F.	10	Dec. 16, 1918	8 wks. ago	Influenza 8-10 wks. ago	Diffuse thinning	
374400	F.	21	Dec. 16, 1918	1 wk. ago	Influenza 4 wks. ago	Scalp easily seen through hair	
374552	F.	27	Dec. 18, 1918	2 wks. ago	Influenza 12 wks. ago	Scalp easily seen through sparse hair	
347571	M.	35	Dec. 19, 1918	8 wks. ago	Influenza 11 wks. ago	Alopecia areata; areas 1-2 in.	Jan. 19, no new hair
294752	F.	17	Dec. 20, 1918	1½ wks. ago	Influenza 12 wks. ago	General thinning	Dec. 26, no new hair
375141	F.	10	Dec. 26, 1918	1 wk. ago	Influenza, time not recorded	Diffuse thinning	
375657	F.	21	Dec. 27, 1918	2 wks. ago	Influenza and pneumonia and 7 mos. miscarriage 12 wks. ago	Severe general alopecia	Jan. 9, hair still falling
375690	F.	21	Dec. 27, 1918	2 wks. ago	Influenza 10-12 wks. ago	Fairly severe diffuse alopecia	
375963	F.	12	Dec. 27, 1918	2 wks. ago	Influenza 10 wks. ago. Sleek one week	Scalp clean. Hair falls on slight- est traction	
281728	F.	13	Dec. 28, 1918	During con- valescence	Influenza 12 wks. ago	General thinning	
356469	F.	25	Jan. 4, 1919	Not recorded	Influenza 11-12 wks. ago	General thinning	Hair falling "for years." Much worse since influenza
375691	F.	13	Jan. 6, 1919	4 wks. ago	Influenza 14 wks. ago	Very moderate loss of hair	
375453	F.	29	Jan. 6, 1919	3 wks. ago	Influenza and pneumonia. Time not recorded	40% loss of hair	
375794	F.	35	Jan. 7, 1919	4 wks. ago	Influenza 10-12 wks. ago	60% loss of hair	
375851	F.	17	Jan. 8, 1919	4 wks. ago	Influenza 12 wks. ago	Diffuse alopecia of moderate grade	
42453	M.	39	Jan. 8, 1919	3-4 wks. ago	Influenza and pneumonia 10-12 wks. ago	60% loss of hair	
294259	M.	27	Jan. 14, 1919	1½ wks. ago	Influenza 12 wks. ago	Diffuse thinning	
375462	F.	19	Jan. 16, 1919	10 wks. ago	Influenza 13 wks. ago	General thinning. Also "nits"	
117150	F.	34	Jan. 17, 1919	2 wks. ago	Influenza 12 wks. ago	Slight general thinning	Hair had been falling with dand- ruff for several years. Much worse since influenza
375528	F.	22	Jan. 17, 1919	10 wks. ago	Influenza 12 wks. ago	General thinning	
329951	F.	15	Jan. 18, 1919	2 wks. ago	Influenza 8 wks. ago	General thinning. Much dandruff	Dandruff for 5 years
Private case	M.	24	Jan. 18, 1919	2 wks. ago	Influenza and pneumonia 14 wks. ago. Sleek 9 wks.	General thinning. One bald spot size of twenty-five cent piece over occiput	

The head should be held down so that the blood will gravitate toward the scalp, then the whole scalp should be grasped with both hands and rolled or kneaded, not simply rubbed.

Charles J. White⁵ believes that the medicinal treatment should vary according to the presence or absence of dandruff in the patient's scalp. He shares the view of a number of other prominent investigators, namely, that most cases of premature baldness are due to seborrhea or dandruff, and that this condition in turn is caused by a micro-organism, the "bottle bacillus" of Sabouraud or the micrococcus of Unna. With this in mind he deems it advisable to treat the dandruff when it complicates post-influenzal alopecia by the following means:

OINTMENT A.

R		
	Sodium bichlorate	0.25
	White wax	3.5
	Sulphur	3.5
	Water	7.8
	Oil of rose geranium	q. s.
	Liquid petrolatum	19.5

Sig:—Apply one night a week, followed in the morning by a shampoo.

WASH A.

R		
	Mercuric chloride	0.25
	Eucresol procapillis (Bilhuber)	8
	Spts. formic acid	30
	Castor oil	0—8
	Alcohol ad	240

Apply 3 mornings a week. To be used in conjunction with Ointment A.

If the scalp is not inflamed, and if there is no dandruff to speak of, the following lotion is very useful as a rubefacient with possibly some direct stimulating effect on the hair due to the pilocarpine and quinine.

WASH B.

R		
	Pilocarpine nitrate	0.06
	Quinine sulphate	0.6
	Tr. cantharides	12
	Tr. capsicum	12
	Alcohol ad	240

Apply 3 mornings a week.

Personally, I cannot agree that all cases of dandruff are due to a superficial infection of the hair follicles, nor that the majority of cases of premature alopecia are traceable to that cause. As we all know, the epidermis over the entire body is in a state of continual physiological exfoliation. Clean people bathe daily or on alternate days, hence wash away these scales faster than they can accumulate, and what is not washed away is rubbed away by the clothing. In the scalp it is different. We wash our heads

once in one, two, or three weeks. Is it any wonder that the normal exfoliating scales accumulate, enmeshed as they are by the hair? Of course, a scalp which is excessively itchy, red, and inflamed, and covered with scales is pathological and undoubtedly the seat of an infection, but this is not the picture of the average scalp with slight dandruff.

W. H. Dieffenbach⁶ and many others claim excellent results in the treatment of alopecia by use of ultra-violet light.

PROGNOSIS.

Complete regrowth usually takes place gradually after most febrile disorders. On the other hand, more or less alopecia may remain permanently. This may be due to impaired general circulation, according to Walsh, or to impaired local circulation from a snugly fitting hat in a scalp already weakened by disease, according to MacLeod. Possibly either or both or still other factors operate.

SUMMARY.

1. Alopecia is a not infrequent sequela of influenza, occurring commonly about two or three months after the onset of the influenza, but occasionally during convalescence.
2. The alopecia is usually of the diffuse type, although in one of the hospital cases and one private case the lesions were patchy, and, without a history of influenza, might have been diagnosed alopecia areata.
3. Most of the cases which have come to our notice have been females, twenty-one of the twenty-five consecutive cases.
4. All of the twenty-five patients are under thirty-six years of age.
5. The ultimate aim in treatment is to promote a healthy circulation in the scalp. This is attained most easily by massage, with the head lowered; by avoidance of obstruction to the main vessels of supply to the scalp by padding the hat band at appropriate points; by stimulating lotions; by keeping the scalp clean.
6. For statistical purposes it is desirable that cases be recorded and that the condition of the circulation be examined with especial reference to heart lesions.

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FOCAL INFECTION AND ITS RELATION TO TOXAEMIA OF PREGNANCY WITH OR WITHOUT CONVULSIONS.*

BY JOHN E. TALBOT, M.D., WORCESTER, MASS.

It has been my earnest desire in writing the paper which I am about to read to you to enlist sufficient interest so that others will take up the investigation which has interested me for the past two years.

That there is a relationship between focal infection and the incidence of toxæmia of pregnancy with or without convulsions, I am absolutely convinced. Whether the theory which I have evolved is the explanation of the cause and effects of this relationship can be determined only by the accumulation of evidence found by others, backed by more precise laboratory tests.

It is my intention, therefore, first to give you a summary of the theory, then to cite certain cases to show the clinical evidence of this relationship and then to emphasize some of the difficulties which will be met in carrying out an investigation.

The theory of which I am about to give you a summary is more fully dealt with in an article published in the February number of *Surgery, Gynecology, and Obstetrics*.

These are the main points of the theory. In normal life the physiological metabolic waste products of the system are more or less constant in amount. This supply of waste products makes a more or less constant demand upon the kidney excretory function.

During the development of a normal pregnancy there is a gradually increasing quantity of physiological metabolic waste products which have to be excreted by the kidneys, and this gradual increase in the total quantity of these waste products makes a gradually increasing demand upon the excretory function of the kidneys.

The kidneys as organs of excretion are concerned only with the percentage of concentration of waste products in the blood. In other words, the reserve power of the kidneys is represented by their ability to excrete waste products in abnormal concentration in the blood.

The increase in waste products resulting from the developing pregnancy taxes in progressively increasing degrees that functional reserve power of the kidneys.

It is important to note that there is no other condition in nature which makes so heavy a demand on the reserve power of the kidneys.

Nature has provided in a normal individual a sufficient kidney reserve power to take care of a normal pregnancy in order to perpetuate the organism of man.

These normal physiological waste products are injurious to the system if retained. Anuria, if continued long enough, results in death. It is therefore reasonable to assume that, if these waste products are injurious in strong concentrations, they are also injurious in lesser concentrations.

In chronic nephritis we know that the kidneys' functional power is decreased, that is to say, their reserve power is not as great as in normal kidneys.

This reduction in reserve power is brought about in chronic nephritis by two factors. First, there is an actual destruction of kidney tissue, thus reducing the amount of excretory surface in the kidneys; and second, there is a reduction of the functional power of the kidneys, represented by their ability to excrete waste products in abnormal concentration. To my mind, the full appreciation of this distinction between the loss of excretory power due to the actual destruction of kidney tissue and the loss of power due to disturbed functional power of that tissue which remains is essential.

It is admitted by all that there is a marked increase in the incidence of toxæmia of pregnancy and eclampsia when pregnancy is superimposed upon an already existing chronic nephritis.

This fact suggests strongly that the incidence of toxæmia is intimately connected with the excretory processes of the body. This point of view is also strongly supported by what may be called the therapeutic test. No one can deny that by stimulating the excretory processes of the body many cases of toxæmia and eclampsia are benefited thereby.

We are necessarily drawn to the conclusion that there is something in the blood stream causing the symptoms of toxæmia of pregnancy and eclampsia when returned in the system, and that these symptoms are abated when sufficient amount of this something (better termed a poison) has been eliminated.

We are also drawn inevitably to the conclusion that this poison has intimate connection with the developing pregnancy, for when we in

* Read before the Obstetrical Society of Boston.

terrupt the pregnancy we almost always get an immediate abatement of symptoms.

I have tried to show that the by-products of a normally developing pregnancy are injurious if retained within the system.

I therefore advance the theory that it is the retention of these normal waste products of the developing pregnancy which are the immediate cause of the syndrome of symptoms known as toxæmia of pregnancy with or without convulsions. I believe there is good support for this statement.

It can be safely stated that there are no symptoms of chronic nephritis which do not occur in toxæmia of pregnancy and eclampsia. The great similarity of these symptoms is so striking that it suggests a common cause.

If we assume that the symptoms of chronic nephritis are due to retained physiological waste products, this similarity can be explained.

In the one case the supply of waste products is a constant, and it is only after years of slow injury to the excretory function of the kidneys that there is a retention sufficient to bring about convulsions and death.

In the other case the supply of waste products is not a constant but a gradually rising tide which overwhelms the kidney reserve power and there is likewise retention sufficient to cause convulsions and death.

Why should this poison not be excreted? It is undoubtedly true that the great majority of cases, showing toxic symptoms in pregnancy, show no previous kidney insufficiency. It is necessary, therefore, to look further to find a cause for the retention of this poison.

It is a well-known fact that the toxins of a severe acute infection cause a temporary acute nephritis as evidenced by albumin, blood, leucocytes, and casts in the urine. It is also characteristic of this type of urine to be small in amount. This tends to show that the functional power of the kidneys is inhibited or partially reduced by these toxins resulting from bacterial growth. If these toxins can cause this damage when in strong concentration in the blood, it is reasonable to assume that these same toxins must be injurious to the kidney function when in lesser concentration in the blood.

If, therefore, we find that chronic sepsis is coincident with the incidence of toxæmia of pregnancy, we have an explanation of why the

poison which causes the symptoms is retained in the system.

In the series of 97 cases of toxæmia of pregnancy and eclampsia reported in my paper, I found chronic sepsis present in the teeth in every case without a single exception.

In my subsequent series I have not an unbroken record, but in these cases I have not had full opportunity to investigate the situation.

There is one great objection to the truth of this theory which arises in everyone's mind almost immediately, and that is that this coincidence in my series between focal infection and toxæmia of pregnancy is due to the great prevalence of focal infection. I admit that this objection is a very real obstacle in obtaining an acceptance of the theory, but my answer is this. It is a fairly well accepted principle of medicine that infectious arthritis is caused by foci of infection in the teeth or tonsils, and yet everyone with foci of sepsis does not have infectious arthritis. Why should more be asked of one theory than another?

The rejoinder to this is also apparent. In infectious arthritis we are generally dealing with a specific bacterium.

My answer has no laboratory basis as yet, but I am of the opinion that when the truth is known, we may find that here again we are dealing with a specific bacterium.

I regret that there is not time to go into details and show you how successfully the many manifestations of toxæmia of pregnancy and eclampsia, both clinical and pathological, can be explained by this theory. I regret also that I can only hint at the importance of the relation of focal infection to many other complications of pregnancy. That many cases of breast abscess and pyelitis can be attributed to this cause as well as macerated fetus and some affections of the newborn is more than probable.

There is clinical evidence that there is a relationship between focal infection and the onset of symptoms of toxæmia of pregnancy. Among the more striking cases in my list are these:

Patient, a multipara, due August 10. Urine examination on July 31 showed trace of albumin, sediment negative. When I called, I found that she had no complaints but showed puffiness above the eyes and slightly swollen hands. Blood pressure, 140 systolic: diastolic, 110.

It has been my custom to make my inquiries as carefully as possible in order not to lead the

patient. so I asked her if, since my last visit, she had had any discomforts such as aches or pains. In response she told me that four days ago she had a severe attack of left facial neuralgia. I had never looked in her mouth before, but was not surprised to find on the left upper jaw a pivot tooth. This case went to the hospital and remained under eliminative treatment until the child was born on August 20, the blood pressure going as high as 155-110 and remaining above 140-110 continuously.

The onset of labor began with a complete faint and labor was very intense while it lasted, which was less than two hours. She gave birth to a stillborn child which had been active within a few hours of labor. A large clot of dark blood coming away with the placenta gave me the diagnosis of partial premature separation of the placenta.

As soon as she was strong enough she had the pivot tooth x-rayed by one of the most prominent dentists in this city (Boston), who told her that there was something there, but as long as it did not cause her any more trouble than it had, he believed in letting it alone.

Another case, a multipara, brought to Memorial Hospital by a very able general practitioner because the patient sent for him on account of severe headache, and he had found a lot of albumin in her urine. She was full-term and on her arrival at the hospital had started labor. She had not been there long when she had a convulsion, followed by three more, at which time I delivered her by low forceps.

During the waiting process, the doctor who had come in with her made the remark that he wondered if the cause of eclampsia would ever be found. I answered that I thought that I had found it and that it had a relation to focal infection, especially in the teeth. His answer was, "That's funny, this patient called me up a week ago because she was having a very severe toothache!"

X-Rays were taken in due time and several bad abscesses were revealed at the roots of her teeth.

Another case, who is now almost at the end of the eighth month of her second pregnancy. I did not have charge of her during her first pregnancy, but this is her history.

Some months before she became pregnant for the first time, she developed a discharging sinus just below the symphysis of the lower

jaw, which persistently discharged pus in spite of all local treatments. This continued until she was about six months pregnant, when it ceased to discharge. One month later she had eclampsia and delivered herself of a stillborn child. About three months after the birth, the sinus began discharging again. Her brother, who is a medical student, advised her to have the three molars on both sides of the lower jaw, which were very carious, removed. She did this and the sinus healed almost immediately and has never drained since.

She came to me at the beginning of the fourth month of her second pregnancy and had a blood pressure of 140-100. Urine negative. At four and a half months she reported with headache, specks before the eyes, and marked edema of the legs. She had a gold crown in the upper jaw with inflamed gums. We had an x-ray taken, found pus, had the tooth extracted. Her blood pressure, which had risen to 155-110, dropped to 145-90, the symptoms entirely disappeared and the patient states at each visit now that she never felt so well.

The case of Mrs. E., reported in full in my paper in *Surgery, Gynecology, and Obstetrics*, is the first case which drew my attention to a possible relationship. In that case she had a severe attack of neuritic pain in her right arm and shoulder just before her blood pressure began to rise.

Of course every theory dependent upon the sequence of clinical observations is subject to question whether this sequence is not a mere coincidence. However, I could give you many other instances of this sequence and my experiences have convinced me that this sequence is of great importance.

It is important to note, however, that there are many cases which do not show any symptoms which could signify any increased activity in the focus of infection. This statement raises another very important point.

The absence of local symptoms in the teeth and tonsils cannot be depended upon to rule out the presence of a local pocket of pus. It does not matter how good the dentist is, your guess is just as good as his, from external inspection. It is always a question of x-ray examination and I am sorry to say that even then there is a very wide margin of error.

My experiences reported in the case of Mrs. Pa., already reported in my paper, show some of the difficulties with the x-ray expert. In

that case he did not x-ray all of the teeth because they "looked good." He did find pus at the bottom of one molar, but I had to insist in order to get it pulled. His report, after pulling it, was that there was not much the matter with it, but the patient told me that she could hardly breathe because the odor was so foul.

The difficulties in getting the treatment carried out are small, however, to the difficulties in locating the focus of infection.

When you find that a negative report is given you, based upon pictures which do not even show the ends of the roots of the teeth where the abscess is most likely to be, it is then that I can see where other investigators will go absolutely wrong. A man who will do this could not be depended upon to take two views of the same tooth for fear that one root might hide an abscess on another root.

It is necessary in these x-rays to be able to follow the peridental membrane throughout and, if this does not show on the first film, it is necessary to take them until it can be traced.

A case in point will demonstrate. This case came to me complaining that she felt very tired all the time, was nervous and irritable, and that it seemed as though she could not get out of bed in the morning, although she slept fairly well. I found a blood pressure at 145-100. Physical examination was negative except that she was obese and she had a marked puffiness above the eyes. Inspection of her teeth was negative. However, on the strength of the raised blood pressure and puffiness over the eyes, I recommended x-rays of her teeth. The report was negative.

I saw the x-rays, which were not clear, and made a mental reservation in the case, although it seemed as though I was wrong. I gave the patient a tonic and waited.

Three months later I was called by the patient because of severe left-sided facial neuralgia. It was not easy to do, but this time I persuaded her to go to another x-ray expert and have another set of x-rays. This time the dentist found an abscess, opened it before she left the office, and sent her home relieved.

Another case is of interest in this search for pus. This patient had had several attacks of inflammatory rheumatism as a young girl, and approximately ten and five years ago had had tonsillectomies. She came to me to take care of her through her first pregnancy. In the last

two weeks of her pregnancy she developed toxic symptoms, with albumin and blood pressure of 170-120. She had some hydramnios and a small, deformed child.

In a month from delivery her urine and blood pressure were normal. In another month she had a severe sore throat resembling quinsy. A throat specialist removed tonsillar tissue for the third time and with it two large pockets of pus. Within the past week she has had x-rays of a suspicious tooth, and pus was found.

These cases show plainly the difficulties to be met in the search to establish the presence of a focus of infection. By holding the attitude that toxæmia of pregnancy is a symptom of the presence of pus somewhere, I have been able to demonstrate it in those cases which have permitted this sort of exhaustive investigation.

Before closing this subject, I should like to speak of certain symptoms which I believe are aids in the search for pus.

You will undoubtedly agree with me when I say that toxic cases of pregnancy present a more or less characteristic appearance around the eyes, especially a puffiness just above the eyes. It is not always present but is very frequently present. It has been my experience that this sign is of some value as a sign of the presence of a focus of infection. It is not infallible, but it has been very useful. I have carried its use into general practice and find that it stands the test there as well as in pregnancy.

The most important leaders, however, are to be found in what I shall broadly term the major and minor neuritic symptoms. Among the major neuritic symptoms are facial neuralgia, one-sided headaches, neuritic pains in the arms or neck. Roughly speaking, the headaches due to high blood pressure or those suggestive of impending convulsions are those which occur throughout the head or in the occipital region. Unilateral headaches, I believe, signify a neuritic pain due to the activity of the toxins of sepsis.

Among the minor neuritic symptoms I have placed numbness of the hands or feet, generally accompanied by prickling sensations. Inability to go to sleep, which is frequently associated with prickling or stinging sensations in the arms, legs, or body.

I do not wish to be understood that these neuritic symptoms are consistently present, but I do believe that when present they generally

signify an activity in a pus pocket somewhere in the system.

Just as the symptoms of toxæmia give us warning of impending convulsions, I believe these neuritic symptoms are warnings of impending toxæmia.

It has been a source of much regret to me that I have not been able both to search the literature on this subject and to start an investigation of my own to establish the points of this theory. Insufficient time and lack of proper laboratory facilities occasioned by the war have prevented me.

I have noted, however, a few reports from the work of other men which are consistent with the theory.

Mosher, in an article reported in the December number of the *American Journal of Obstetrics*, calls attention to the frequent association of focal infection with toxæmia of pregnancy.

Warnekros found 18 positive blood cultures out of 25 taken in cases of toxæmia of pregnancy.

DeLee expressed his belief in the probability of an infectious basis for toxæmia of pregnancy.

Mosher quotes LaVake as stating that in every case of eclampsia a focus of infection can be demonstrated.

Besides these reports of purely obstetrical nature are articles which state that arterial hypertension can be lowered by eradicating foci of infection; and last, but not least, that albuminuria can likewise be cured.

All these articles tend to show that the relationship between focal infection and toxæmia of pregnancy is more than probable.

If this relationship can be established, the dental profession will hold a place in the child conservation movement and in prophylactic medicine unequalled by any other branch of medicine.

In closing let me say a word in regard to the theory which I have advanced that it is the retained metabolic waste products which cause the symptoms of toxæmia of pregnancy and eclampsia.

It has been well established that in chronic nephritis there is retained nitrogen in the blood in varying amounts, according to the seriousness of the disease. I believe that it is this retained nitrogen which represents the retained metabolic waste products. There is good reason to believe from work already started that there

is likewise retained nitrogen in the blood of toxic and eclamptic patients. If this point is finally established, I believe that the amount of retained nitrogen in the blood will give us our best test as to the amount of toxæmia present in a given case.

NOTES ON TREATMENT OF LOW BACK STRAINS.

BY HERMAN W. MARSHALL, M.D., BOSTON.

STRAINS of muscles and ligaments in lumbar, lumbo-sacral, and sacro-iliac regions of the spine are relieved now more or less successfully by well-known protective methods, including adhesive straps, webbing belts, orthopedic braces, jackets and plaster-of-Paris casts, depending on exact sites and severity of strains.

Correct general principles of treatment consist in protecting weakened structures exactly the right amount in exactly the right way, and in limbering them up after periods of rest by means of methods such as massage, passive motions, graduated exercises and various physical therapeutic means.

Success in results attained depend largely on particular lengths of times therapeutic measures are prescribed, on degrees of protection afforded, and the manner with which rest, exercises, and physical therapeutic agents are combined or alternated in beneficial physiologic ways; because identically the same kind of treatments may be prescribed skilfully in one instance or unskilfully in the next case, according how each is given to each patient.

One special modification used in protecting weakened sacro-iliac ligaments will be described in this paper.

It is universally known now that strips of adhesive tape applied across the back of the pelvis tightly will partly or wholly relieve strained sacro-iliac ligaments for a short time. It has also been proved by practical experience that adhesive strips stretch and also irritate the skin frequently to such a degree that their continued use becomes impossible.

Canvas belts or firm webbing belts therefore usually are substituted for adhesive strappings among patients with chronic back strains. Webbing and canvas have the limitations that they chafe the skin in time and also become stretched. Patients wear them so loosely that,

often, after a few weeks, their effectiveness is largely lost.

Extremely slight degrees of ligamentous stretching take place in most cases of sacro-iliac strain, and therefore, it is the last few degrees of tightness in any encircling belt that are the most efficient ones for holding ligaments; similarly as the last few degrees of tightness in steel hoops around a barrel determine largely the efficiency of the hoops.

The question arises naturally why flexible, adjustable steel ribbons should not be used as belts for patients. They do not stretch as much as adhesive, webbing, or leather, and they are strong enough to permit greater narrowness, which in certain locations allows less chafing. When they are comfortably padded they can be worn continuously more tightly than other kinds of belts and, owing to their inelasticity, are more efficient than any of the other devices: though of course unlimited amounts of pressure cannot be borne by the soft tissues of the body to the same degree as by solid wooden staves of a barrel.

Certain practical obstacles arise, however, in use of flexible steel bands. It is found that any thin steel tape of uniform width and parallel straight edges will not lie smoothly with an even pressure everywhere against the skin, even though it twists and rolls around the body easily. Such a steel ribbon instead will cut into the flesh along its edges at certain points, while at other points its edges will push away from the skin.

This difficulty is overcome by fashioning the ribbon from a sheet of thin steel, cut according to a carefully made pattern. The properly fitted ribbon when lying perfectly flat has curved edges instead of straight lines, one edge is longer than the other and irregularities exist in each edge to meet special requirements of satisfactory fitting. But these obstacles can be overcome by experience and it is possible to make sacro-iliac straps reasonably cheap as well as very efficient.

Simple though this variation is, yet it is a modification of far-reaching practical importance, because by steel tapes of this kind many extremely chronic cases of sacro-iliac relaxations can be relieved that cannot be held firmly enough with other forms of belts.

It is of interest to record that it required the united attention and coöperation of apparatus maker and practitioner to think of

and to appreciate the value of this simple device; and the writer is indebted to Mr. William Kraus of Boston, for his valuable suggestions and practical experience.

The other special topic for discussion in this paper relates to use of plaster-of-Paris jackets and removable rigid braces in treatment of back strains.

Plaster-of-Paris jackets are best for immobilization, of fractured or diseased bones of the spine, because continuous and as complete protection as possible is most important in these cases. Muscles and ligaments atrophy and weaken, if they are held long in jackets, yet the benefit to serious osseous lesions overbalance temporary damage done to the tissues which bind together and move the bones.

The situation is different, however, when musculo-ligamentous strains without serious bony or synovial involvements are being dealt with. Indications for treatment, then, are alternations of protective and stimulative measures, not immobilization alone continuously for a long time, nor too much exercise, massage, or other locally stimulating physical therapeutic method alone.

Too long immobilization, while it may afford comfort for the time, generally means long, disagreeable limbering-up processes after removal of plaster casts; and the change from long protection to uncomfortable manipulations, massage, and exercises subsequently is not appreciated by patients who are inclined to prolong their disability periods by extremely gradual return to full activity.

Early massage and gentle manipulations are indicated in nearly all simple musculo-ligamentous strains as urgently as with strains and traumatic myositis which accompany fractures in the extremities.

Most strained backs should be protected continuously at the most only for a few days at a time, and therefore properly fitted leather and steel braces are preferable, because they permit removals easily for baking, massage, and manipulations at regular intervals. They are preferable to use of split plaster casts for protection in all cases except those of very short duration, because they are more efficient than the latter. Steel braces justify, therefore, the additional expense of their manufacture in cases of moderate or extremely long duration.



The illustration is a photograph of a support provided with flexible steel pelvic band which can be adjusted by a short length of leather strapping. This particular piece of apparatus was designed to restrict lateral motions of the trunk at the lumbo-sacral juncture as well as to hold sacro-iliac joints, and it is provided with upright steel pieces attached to the firmly seated flexible pelvic base. The leather padding is widened in front to support the abdomen when desired. It combines features of accuracy of fitting, comfort, and ease of removal, which make it superior to plaster jackets for the majority of chronic low back strains.

PNEUMONIA AND EMPYEMA.

By FIRST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

(Concluded from page 451.)

46. *The Stay in Hospital* may best be studied in a review of our first six months series, admitted from the opening of the hospital through March 31. There were 241, including thirty patients still here on May 31, two months after the admission of the last case in

that series. The average stay was 40 days; this was partly due to a small number of long stayers, but this inconvenient fact cannot be omitted. Those with empyema averaged sixty days, vs. thirty-five for those without. If we consider only the completed cases (*i.e.*, dead, S.C.D.'d. or sent to duty), those dying of empyema were in hospital eighteen days *vs.* eight for those dying without empyema; and those with empyema now well (*i.e.*, free from symptoms and out of hospital) averaged 92 days *vs.* 32 for straight pneumonias, now well. The last figure is worth emphasis: the mildest group (the well pneumonias without empyema) averaged more than a month in the hospital.

In this last group, the long stay was deliberate, due to our belief in the importance of a longer convalescent period than that currently considered adequate. This point will be re-emphasized in the next paragraph. This intentional retention or safeguarding, accounts to a considerable degree for the high non-effective rate from pneumonia, which was (*cf.* par. 4) fourteen per one thousand of the men in this camp; or from another viewpoint, was the cause of nearly half the days of work lost to the government by all diseases. Obviously the convalescent stay can be cut, but wisely so only since the introduction of "convalescent wards" and "Developmental Battalions."

TABLE XXVII. STAY IN HOSPITAL.

WEEKS	No. CASES					
	Without empyema.			With empyema.		
	Well.	In hosp.	Dead.	Well.	In hosp.	Dead.
Less than 1	4	0	6	0	0	7
1-2	21	0	5	0	0	6
2-3	27	0	0	0	0	4
3-4	25	0	0	0	0	3
4-5	28	0	0	0	0	1
5-6	14	0	0	1	0	0
6-7	18	0	0	1	0	0
7-8	11	0	0	0	0	1
8-9	7	1	0	0	3	1
9-10	1	3	0	0	2	1
10-11	6	2	0	2	3	0
11-12	0	2	0	0	0	0
12-13	1	1	0	0	2	0
13-14	0	0	0	2	0	0
14-15	0	1	0	1	1	0
15-16	0	2	0	3	1	0
16-17	0	1	0	0	2	0
17-18	0	0	0	1	1	0
18-19	0	0	0	1	0	0
19-20	0	0	0	0	2	0
20-21	1	0	0	0	0	0
Totals	164	13	11	12	17	24
Av. No. days in hosp.	32	85	8	92	91	18
Av. No. days in hosp.						
Av. No. days in hosp.						
				40		

47. *Return to Duty* even in the mildest group mentioned above can seldom be immediate. Most of the convalescents as soon as ambulatory have been transferred to other medical wards and kept on light work about the ward for a week or more; then if free from symptoms, the heart has been fluoroscoped and the patient sent to quarters with the following note to the Regimental Surgeon:

Base Hospital, Camp Devens, Mass.
.....1918.

From: Chief of Medical Service.
To: The Surgeon.
Subject: X-Ray of heart.

1. was recently in bed with pneumonia.

2. A certain number of such patients have shown undoubted myocardial weakness on duty, though no physical signs while in the hospital, other than cardiac dilatation by fluoroscopic examination.

3. It is desired that this man report to the X-Ray Room weekly for a while, beginning about between 2 and 4 P.M., preferably at 2.30 P.M.

4. He will not be detained longer than one hour.

5. Please have him bring this letter with him.

6. It is requested that he be not returned to duty until notification is received from the Base Hospital, that he is physically fit. This arrangement was made at a meeting of the Division Surgeon with the Regimental Surgeons at the Base Hospital.

.....
Major, M.R.C.

About four days after leaving hospital the patient has returned to the radiologist and been again fluoroscoped. If the heart shadow was approximately normal and if no marked complaint was made, he was told that he need not return and to report the fact to the Regimental Surgeon. If the radiologist was in doubt he gave the man a slip to return in a week.

This procedure has at last been replaced, except in cases likely to show distinct radiographic abnormalities, by graded military exercises under supervision of a medical officer in a special convalescent ward from which the patients go direct to duty. When results from these convalescent classes shall have occurred, the support of more figures can be definitely given to Lt. Col. L. C. Duncan's radical conclusion ("Measles and Pneumonia in Camp Wheeler," *Military Surgeon*, Feb., 1918, XLII, p. 132) that "from two to three months are lost by each patient." Too many people feel that a pneumonia patient is cured by the crisis. Too few appreciate that after pneumonia, just as after typhoid, a considerable period is necessary even for a patient in apparently good condition.

RECAPITULATION.

While the figures speak for themselves, their mass is so confusing that concentration may be permitted to those conclusions which seem worth keeping in mind:

1. *Period*: 35 weeks.

2. *Cases considered* (infection with pneumococcus or streptococcus or both): 485.

3. *Of total non-effective* rate 45% was due to pneumonia.

4. *Pneumonia mortality* was only 13%.

5. *Empyema incidence* was 16% of 485 pneumonias.

6. *Empyema mortality* was 44%.

7. *Operated empyemas* had a mortality of only 21%.

8. *Measles* was the cause of only 8% of the 485 pneumonias; but when it was, the pneumonia was nearly three times as fatal as when primary.

9. *Negroes* had a vastly higher case rate than the whites, but their mortality was only a little higher. The lobar variety was present in 94% of them, vs. 74% of the white cases.

10. *Kinds of pneumonia*: (a) 88% primary, 8% post-measles, and 4% post-ether. (b) 79% lobar, 21% broncho.

11. *Onset* was distinctly abrupt in only one-third of the cases.

12. *Diagnosis of pneumonia* was not made on the average till the fourth day of the disease.

13. *Earlier diagnosis* might in future be made by persistence in the following:

(1) We should watch all "common colds" (minor upper naso-pharyngeal infections), measles and post-ethers, for a rise in respirations. If these should reach 24, we should class the patient as a "pneumonia suspect"; and a "probable pneumonia" if it reaches 25 (the average admission respiratory rate among 241 pneumonias).

(2) For any suspect we should:

(a) Inquire daily for unilateral chest pain.

(b) Auscult daily the chest, front and back, especially at the angle of each scapula, listening particularly for râles after the "stified cough" (Moore), and (if bronchi-

tis be present) for bronchovesicular breathing (comparing the two sides); and in absence of that sign listening for whispered pectoriloquy on one side or the other.

(c) Secure x-ray.

(d) Secure sputum early. Now that the simpler Krumwiede method is available, typing should be attempted even before consolidation is detected.

(3) We should request the Camp Surgeon to issue a circular letter to all the medical officers in his jurisdiction, directing their attention to:

(a) The importance of a temperature, and respiration as well, taken on all men complaining of pain in the chest or belly, perhaps even if there be no associated cough.

(b) The low mortality (8%) of pneumonias when typed and treated.

(c) The high mortality of pneumonias when ambulant.

(d) The desirability of referring men to the hospital for "observation for pneumonia" on slight suspicion.

14. *Bacteriology* had taught us that even more fatal than pneumococcus is its mixture with the hemolytic streptococcus, and most fatal is the streptococcus alone. This latter alone caused 53% of the empyemas.

15. The main complication beside "the severe symptom" of empyema, has been renal, which was present in more than half the pneumonias. A renal test on discharge should be routine.

16. We could *diagnose effusion earlier* by suspecting *every* pneumonia guilty unless proven innocent, and that too *even on the second day* of the disease. We should listen daily for muffling of breath sounds; but *even if they remain clear* we should feel uneasy if they become "rasping" (Hamburger), if unilateral dullness extends, or if prostration is present. Any of these three reasons is adequate for sticking in a needle on a syringe perhaps every third day. Any drop of fluid obtained should be sent to the laboratory expert for smear and culture, and if there is enough fluid for a white count.

17. *Graded military exercises* over a consid-

erable period should be an essential part of the attempt to shorten convalescence and return the man to duty.

[This study was suggested by the chief of the medical service. Major (now Lt.-Col.) Elliott P. Joslin, M.C., and greatly aided by his advice.]

Book Reviews.

Treasury Department. United States Public Health Service Hygienic Laboratory-Bulletin No. 112.

The United States Public Health Service in its April, 1918, bulletin publishes the following papers:

I. Phenols as Preservatives of Antipneumococci Serum. A pharmacological story. By Carl Voegtlin.

II. The Nature of Contaminations of Biological Products. By I. A. Bengston.

III. Studies in Preservatives of Biological Products. The Effects of Certain Substances on Organisms Found in Biological Products. By M. H. Neill.

IV. The Effect of Ether on Tetanus Spores and on Certain other Micro-organisms. By H. B. Corbitt.

The purpose of paper number one is to report a number of pharmacological experiments which were made in order to determine the suitability of trikresol and phenol as preservatives for antipneumococci serum. Inasmuch as phenols are fairly toxic substances, it is important to determine whether or not the amount of phenol administered with the antipneumococci serum may give rise to any undesirable symptoms and if this be the case, how are these symptoms to be avoided. Experiments on monkeys, dogs and cats are discussed at length in this paper and tracings indicating the effect on blood pressure are shown. The conclusions drawn on the basis of observations recorded are that intravenous injection of antipneumococci serum should be made at a very slow rate.

Paper number two is a study of organisms isolated as contaminations in biological products during the period from November, 1914, to January, 1917, including representatives of the following groups: Coccae (Staphylococci, Streptococci), spore-bearing rods (aerobic), spore-bearing rods (anaerobic), and non-spore-bearing rods, including coccoid bacilli. Aerobic spore-bearing rods were most often isolated, though Staphylococci were also frequently encountered.

Paper number three reports several experi-

ments and gives carefully compiled tables indicating the results. These experiments emphasize the necessity of scrupulous care in the preparation and handling of biological products and demonstrate the fact that the use of preservatives does not insure the sterility of the finished products.

Paper number four is a record of the experiments undertaken in an effort to determine a method whereby any spores of tetanus which may have gained access to vaccine virus could be killed.

Surgery of the Spine and Spinal Cord. By

CHARLES H. FRAZIER, M.D., Sc.D., Professor of Clinical Surgery and Surgeon to Hospital of University of Pennsylvania, Philadelphia; with the collaboration of ALFRED REGINALD ALLEN, M.D., Associate in Neurology, Neuro-pathology, University of Pennsylvania, Philadelphia. With Six Colored Plates, Two Charts and Three Hundred and Seventy-eight Illustrations in Text. New York and London: D. Appleton and Company. 1918.

This is one of those rare books of which it is unnecessary to ask, why was it written? The reasons why are obvious: First, because there is ample room for a new book upon surgery of the spine; second, because the author, as a result of study, work, experiment, and experience has much to tell; he has taken time and pains to present and illustrate his facts in a logical and intelligent fashion; and finally because he is one of a not too large group of American medical men who has respect and affection for the English language, its proper use and its possibilities, even though he writes of technical matters alone.

Of 900 pages in this volume, Dr. Frazier contributes about 650; the remaining 250, a little less than one-third, consist of four monographs: one by Dr. George A. Piersol on the "Anatomy of the Spine and Spinal Cord"; the second by Dr. Alfred Reginald Allen on "Normal and Pathological Physiology of the Spinal Cord"; the third by Dr. John A. Kolmer on "The Cerebrospinal Fluid and Its Relation to Spinal Diseases," and the final by Dr. Henry Pancoast on "The Roentgen Examination of the Spine." The chapters by Dr. Frazier cover the subjects of "Malformations," "Trauma," "Tumors," "Infections," and the technique of "Surgical Procedures."

At the end of each of the fourteen chapters is a bibliography, which seems to cover all important contributions of the past twenty years on the subject covered. This is an excellent arrangement, and one far more desirable than the usual custom of grouping all references to the literature at the end of the volume.

The volume is, therefore, complete. At first

sight it seems a big book; the type is large and very sharp, the spacing and margin generous, the illustrations numerous. In relation to the pictures, it is proper to comment upon the fact that the author has avoided the almost universal error of reducing the size of the cuts to one-half, or, as often happens, one-quarter of its original dimension; he has kept many of them, practically all of his very excellent pictures of operative attack, life size and usually full page: this is a matter of much importance, but rarely met in this proper fashion. Furthermore, he has shown that it is possible to print clear and sharp pictures without the slightest blurring on flat unglossed paper: from the reader's standpoint, this is a matter of definite importance.

Dr. Frazier discusses the various divisions of his subject clearly and at much length; his viewpoint is that of the man who has had an early experience in general surgery, obviously a matter of much importance in dealing with such a subject as this; his descriptions of operations are complete without being verbose; after-treatment is adequately covered; prognosis and the limits of operative therapeutics fairly stated.

We recommend the book very strongly to all surgeons.

Forced Movements, Tropism and Animal Conduct. By JACQUES LOEB, M.D., Ph.D. Sc.D. Philadelphia and London: J. B. Lippincott Company. 1918.

This volume is the first of a series of monographs covering the whole field of biology as viewed from the quantitative basis of experimentation. The author shows by many experiments that the movements of the animal and the plant are entirely dependent upon "tropisms." Symmetry relations are the starting point for the theory of animal conduct. When an electric current is passed through the animal, orientation takes place in the direction of the anode or the cathode, depending upon the organism used. In the same way, the migrations of animals and plants to and from a source of light, is of the nature of a forced movement determined by the effect of light on the photosensitive elements of the body. The author also shows that the Bunsen-Roscoe Theory is true for heliotropic reactions, which are influenced by wave lengths of light and by the addition of various reagents. Geotropism is explained by the laws of mass action, which also explains rate of growth and chemotropism. This explanation is substituted for the "trial and error" method of the psychologists. In conclusion, the author shows that instincts and freedom of the will are manifestations of tropisms. The book is an interesting and logical presentation in defense of the mechanistic theory of animal conduct.

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TERMINATION OF WAR ACTIVITIES OF THE GENERAL MEDICAL BOARD AND ITS COMMITTEES.

In view of the termination of the war activities of the General Medical Board and Medical Section of the Council of National Defense, Secretary of War Newton D. Baker, who, as chairman of the Council, appointed the members of the General Medical Board, has written a personal letter to each of the seventy-five prominent physicians and surgeons comprising the Board, expressing appreciation for their services and thanking them on behalf of the government. Dr. Franklin Martin, chairman of the General Medical Board, has also written, thanking the members of the State and County committees, which for two years have worked under the direction of the Board.

"In terminating the relations between these organizations and the officials with whom they cooperated and worked so effectively," said Dr.

Martin, "while one cannot complain that the war is over, yet a feeling of regret must inevitably arise at the severing of such close connections engendered by the friendship and comradeship that are the natural outgrowths of such important associations."

Secretary Baker's letter is as follows:—

"War Department, Washington.

Dr. Franklin Martin advises me that the work of the General Medical Board of the Advisory Commission of the Council of National Defense is now nearing completion and that the board will be dissolved on April 1st.

I cannot permit the occasion to pass without expressing my grateful appreciation of the work which you have done and the singleness of spirit with which your associates and yourself have devoted themselves to the great work which was placed in the hands of the General Medical Board of the Council of National Defense. While it would be invidious to make any appraisal of the work of your board in comparison with that of any other agency organized in emergency, I need not. I know, assure you that the Government appreciates deeply and genuinely the great and essential contribution which has been made by the Medical Board in the mobilization of the civilian profession, its classification as to specialties and fitness, and in the preparation and organization of information which would enable the department to secure from the manufacturers of the country the vitally necessary instruments and supplies for the medical care and attention of our men in the field.

Since the cessation of hostilities the work of the board has been rounded out to completion. I beg you to accept for yourself and your associates this expression of my deep appreciation of the service which you have rendered to the country.

Cordially yours,

NEWTON D. BAKER.

Secretary of War."

Dr. Martin's letter to the members of the State and County Committees follows:

"Council of National Defense.

Washington, March 25, 1919.

From: Chairman, General Medical Board,
Council of National Defense.

Subject: Termination of War Activities.

Upon the signing of the armistice on November 11, 1918, the strenuous war time activities of the committees of the Medical Section of the Council of National Defense automatically ceased. As the unfinished business in the hands of the committees at that time is now approaching completion, you are hereby notified of the termination of your war duties as a State Committeeman on April 1, 1919.

Not until the history of our part in the great war is written will the people realize the important rôle the medical profession of the United States played in making our country a deciding factor in winning the war. Do you realize that in the year before our entry into the conflict the commissioned officers in the Medical Departments of the Army and the Navy numbered less than five hundred in each service and that practically 40,000 civilian doctors had been added to these two corps by the time hostilities had ceased? When the story is told of the enrollment of these thousands of doctors, it must give the largest credit to our many state and county committees who labored so patriotically and continuously to carry out the recommendations of the organization under which they worked, the Council of National Defense, and thus aided the administrative departments of the Surgeons General of the Army, the Navy, the Public Health Service, and the Provost Marshal General.

The work of these committees under the direction of the General Medical Board had to do with activities of which the following is a brief summary: Recruiting medical officers; standardization of medical and surgical supplies; coöperation in controlling venereal diseases; mobilizing five thousand dental surgeons; establishing committees on hygiene, sanitation, general surgery, orthopedic surgery, ophthalmology, otology, rhinology, and laryngology; general medicine, nursing, women physicians and medical schools; organizing medical advisory boards; the study of industrial medicine; securing through legislation increased rank for reserve medical officers; and finally, individual classification of the members of the profession through the medium of the Volunteer Medical Service Corps.

I want you to know that those of us who have had the responsibility of organizing and enrolling the medical profession and resources appreciate the value of your work and thank you

for it from the bottom of our hearts. This includes the Secretary of War who presides over the Council of National Defense, the Secretary of the Navy, who is one of its members, and the President of the United States, who appointed the Council and on two occasions has said, in speaking of our state and county committees: "Will you not be kind enough to convey to them a message of sincere appreciation from me of their services as authorized governmental agencies? . . . The health of the Army and the Navy and the health of the country at large is due to the coöperation which the public authorities have had from the medical profession."

Finally, in sending this communication to you after our two years of stressing work together, I want to thank you personally for your ever prompt response to my calls for help and for the evidence you have always shown me of your loyalty, fidelity and friendship.

Yours very truly,

FRANKLIN MARTIN,

Chairman, General Medical Board,

Council of National Defense."

SUPPRESSION OF PROSTITUTION IN PORTO RICO.

A REPORT from the Attorney General to the Governor of Porto Rico gives an interesting and valuable account of the efforts to suppress prostitution in Porto Rico. Plans to mobilize 12,000 men on the island gave occasion for a vigorous campaign for combating the prostitution and the resulting venereal disease. Records of the United States Army for Porto Rico show that during the first six months of 1899 the rate of venereal admission per thousand per annum was 467.80. In 1897 the venereal admission rate for the continental army of the United States was 84.50 per thousand. Little change has taken place during the last twenty years. The first weekly report of the conditions at Camp Las Casas gave 471 admissions for venereal diseases among the recently drafted men, which was higher than for any other camp.

A determined effort has been made to prevent women affected with venereal disease from spreading disease among the troops. A special hospital for women was maintained by the municipality of San Juan, to register and treat

public women, and during the period of one year, 677 women were registered for the first time in that institution. During the fiscal year ending June 30, 1917, 1,540 women were clinically examined, with the result that 95% were found to be affected with venereal disease. Criminal laws against prostitution have been actively enforced; of 1102 cases brought before the courts, 824 convictions were obtained. Three district jails of the island were reconstructed for women only. Complete equipments for the medical care and venereal disease treatment of these women were installed. In all the hospitals, the women were treated for vermin and itch, and the patients were vaccinated and treated for hook worm. Surveys made showed that 92% of the women had gonorrhea; 12% had infectious lesions of syphilis; and 42% more had four plus positive Wassermann reactions although without symptoms. Treatment for the venereal diseases was instituted; cases of gonorrhea were all improved and possibly rendered non-infectious; salvarsan and mercury were intensively applied to the syphilitic cases. All the infectious lesions were cleared, and about 50% of those with four plus Wassermann reactions have had them reduced or rendered negative. Removing these sources of infection had a wonderful effect upon the venereal disease rate at Camp Las Casas. During the first six months at this camp of 12,000 men, only 32 new cases of venereal disease were acquired, which is at the rate of 6 per thousand per annum. This illustrates the remarkable result of the rigorous enforcement of the law against prostitution on the health of an army community.

ROCKEFELLER FOUNDATION APPROPRIATIONS FOR 1919.

A RECENT issue of *The Rockefeller Foundation* has outlined the work which will be undertaken by the Foundation during the year 1919. Public health work and medical education will be extended, and war work will be completed. The Yellow Fever Commission, headed by General William C. Gorgas, is starting a war on the disease which it is hoped will result in its complete elimination. The public health activities to be carried out during the year will consist chiefly of these efforts against yellow fever, and of campaigns against tuberculosis in France,

and against malaria and the hook worm disease. The Commission on Tuberculosis in France, which during the war has been co-operating with the American Red Cross, will continue its work on an enlarged budget at the request of the French authorities. Demonstrations in the control of malaria will be carried on in two Southern states. The campaign against the hook worm disease will be waged during the present year in twelve states of America and twenty-one foreign states and countries.

In addition to this public health work to be carried out by the Foundation's International Health Board, appropriations have been made for special studies and demonstrations in mental hygiene by the National Committee for Mental Hygiene, for the creation and maintenance of a School of Hygiene and Public Health at Johns Hopkins University, and for the development of public health nursing.

The Foundation's chief work of the year in medical education will be in connection with the development of training in modern scientific medicine in China through the Foundation's China Medical Board. This Board is developing a strong medical center at Peking, which will open this autumn, and is planning another medical school and hospital at Shanghai. The Board is also helping to strengthen medical work of other organizations already established throughout China, and is furnishing fellowships for medical study in America by Chinese physicians and nurses and of medical missionaries on furlough.

CLINICAL OBSERVATIONS IN MILITARY ROENTGENOLOGY.

A REPRINT from the *American Journal of Roentgenology* describes clinical observations in military roentgenology, with especial reference to the bismuth-iodoform-paraffin paste of Morrison and to a method for the determination of the presence of foreign bodies by secondary emanations. The conditions described by Brown and Young are not unusual and are likely to have been met with by any roentgen worker who has served in the European war area. In a hospital where speed is an utter necessity, it is important to handle quickly the simpler cases in order to be able to exercise greater pre-

cision in localizing methods where more complicated cases are involved. The capacity for speed must be equal to the pressure, and many methods which have excellent points do not coincide with the necessity for rapidity.

These writers have found that they could work best with one or two simple methods—a simply managed parallax method and a method of displacement such as might be exemplified in the Strohl method. Their record of 143 localizations in 23 hours tends to confirm this statement. It is essential to localize as near to the foreign body as possible. The method used by these two workers involved two steps: (1) a preliminary "gross localization," and (2) finding the central ray and proceeding with the localization method of election. Of the various antiseptic methods employed by the British, perhaps the one most frequently encountered was the presence in or about the wound of the so-called bismuth-iodoform-paraffin paste of Rutherford Morrison.

LIEUTENANT-COLONEL JOHN McCRAE, POET AND PHYSICIAN.

It will be of interest to the profession to learn that John McCrae, the author of "In Flanders Fields," one of the most beautiful lyrics that has been written since the beginning of the war, was a physician as well as a poet, and had studied and practised medicine for twenty years. After his graduation from the University of Toronto, honored by a scholarship in physiology and pathology and a gold medal, he served as resident house physician at the Toronto General Hospital and at Johns Hopkins; then as pathologist to the Montreal General Hospital and to the Alexander Hospital for infectious diseases. Later he served as assistant physician at the Royal Victoria Hospital and as lecturer in medicine at the University. He became a member of the Royal College of Physicians, London, and of the Association of American Physicians. In the Boer War, John McCrae earned the rank of Lieutenant-Colonel and received the Queen's medal with three clasps in recognition of his service in that campaign. On January 28, 1918, after two years of gallant war service with the Canadian forces, he died in France of double pneumonia. "In Flanders Fields" is an eternal memorial

of this physician, one of the small but distinguished number of physicians who have attained eminence also as men of letters.

MEDICAL NOTES.

RECRUDESCENCE OF INFLUENZA.—*The British Medical Journal* reports a recrudescence of influenza in Great Britain, particularly in the northern sections. There has been a high mortality rate in Edinburgh, Glasgow, Dundee, Newcastle-on-Tyne, and Liverpool. The deaths from influenza in London for the week ending February 22 numbered 653. For the week ending March 1, 3,850 deaths from influenza were reported from 96 of the large towns.

In Dublin, an outbreak of influenza is reported. The disease can be treated more efficiently now than in the autumn, for the removal of military patients from the general hospitals has allowed an increase in hospital accommodation for civilian sufferers.

THE NEW CHILDREN'S HOSPITAL, IOWA.—The New Children's Hospital in Iowa was begun in the fall of 1917 and is now ready to receive children who have hitherto lived in the main University Hospital. The hospital is a one-story pavilion, with a frontage of 350 feet. The general plan conforms to the "unit system," to facilitate future expansion. In the center are the administrative offices, and to the east and west are the orthopedic and pediatric wards. The orthopedic section provides accommodations for one hundred patients. In the north wing are the dining room, kitchen, and a temporary schoolroom. To the south are the out-patient department and the orthopedic gymnasium. In addition to these divisions, there is an extension for the operating room and a gallery, surgical supply room, and sterilizing room, and extensions containing wards and rooms for the patients. All the wards open through French doors upon a concrete platform, so that the beds may be rolled out into the open air.

A MILITARY APPOINTMENT.—Lt.-Col. E. G. Zabriskie of New York City has been designated Senior Consultant in Neuro-psychiatry for the American Expeditionary Forces, succeeding Col. Thomas W. Salmon, who has returned to

the United States for duty in the Surgeon-General's office. Lieutenant-Colonel Zabriskie went to France as Divisional-psychiatrist of the Fourth Division. Subsequently he was Consultant in Neuro-psychiatry to the Third and Fifth Corps and to the First Army. After the armistice he served as Consulting Neuro-psychiatrist to the Savenay Hospital Center.

DEVELOPMENT OF SURGERY DURING THE WAR.—Colonel Joseph A. Blake is reported to have remarked in a recent address at the Sorbonne that "There has been little new in the development of surgical knowledge during the war." In speaking of the treatment of wound infections, he is reported to have said:

"There have been fruitful investigations and observations in regard to the treatment of wound infections and shock. In the first two years of the war a search for novel treatments led surgeons toward an effective panacea for wound infections by antiseptic means. It is only more recently that aseptic principles have become reestablished."

In concluding his address, Dr. Blake is reported to have expressed the hope that inter-allied surgical work during the war would be continued by a free exchange of ideas, lectures, and visits between the leading allied medical bodies and universities.

PRIZE FOR RESEARCH ON ASPHYXIATING GASES.—The Montyon prize has been awarded by the Académie des Sciences to Drs. Henri Guillemand and André Labat, of Paris, for their researches on asphyxiating gases. The value of the prize is £100.

ITALIAN RED CROSS.—The sum of £14,414 has been presented to the Italian Red Cross by the Government of the Republic of Cuba for distribution among the families of soldiers who have died in the war and men who have been invalidated by service.

NEW PRESIDENT-GENERAL OF THE ITALIAN RED CROSS.—By a royal decree Senator Count Giuseppe Frascara has been named President-General of the Italian Red Cross.

WOMEN IN ARMY MEDICAL DEPARTMENT.—The Army Medical Department at Washington has given appointments to two women psychologists, Dr. Mabel Fernald and Dr. Margaret

Cobb. The Psychological Division can use trained women for handling the army reports, and it may possibly call upon them to help in special hospitals dealing with cases of reconstruction.

BOSTON AND MASSACHUSETTS.

WEEKLY DEATH RATE IN BOSTON.—During the week ending April 5, the number of deaths reported was 240 against 283 last year, with a rate of 15.71 against 18.81 last year. There were 35 deaths under one year of age against 31 last year.

The number of cases of principal reportable diseases were: Diphtheria, 43; scarlet fever, 57; measles, 4; whooping cough, 10; typhoid fever, 3; tuberculosis, 50.

Included in the above were the following cases of non-residents: Diphtheria, 4; scarlet fever, 5; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 2; whooping cough, 1; tuberculosis, 17.

Included in the above were the following non-residents: Tuberculosis, 1.

Influenza cases, 69; influenza deaths, 10.

INFLUENZA IN BOSTON.—On April 1, there were reported to the Boston Health Department 18 new cases of influenza, with 1 death, and 11 new cases of pneumonia, with 5 deaths. On April 2, 15 influenza cases and 5 of pneumonia, with 4 deaths from influenza and 2 from pneumonia, were reported.

NEW ENGLAND NOTES.

NURSES IN NEW ENGLAND DIVISION.—A survey of the nursing resources of New England has been made in order to furnish the Government data in regard to nursing material which could be drawn upon in case of emergency. A report which has been submitted shows that there are 18,208 available nurses in New England, exclusive of Connecticut, which does not belong to the division. Of these there are 12,175 in the Commonwealth of Massachusetts, of whom 5,277 are located in Metropolitan Boston. The total for Maine is 1,805; for New Hampshire, 1,189; for Vermont, 610; for Rhode Island, 1,429.

Among representative cities, Portland, Me., returns 355; Concord, N. H., 225; Rutland, Vt., 63; Providence, R. I., 1,087; New Bedford, 304; and Worcester, 837. Among coun-

ties throughout the division, Essex, Mass., leads all with a total of 1,326.

The survey includes nurses of every class—graduate nurses, pupil nurses, undergraduate nurses, practical nurses, trained attendants, midwives, and every person who has taken a Red Cross course.

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR FEBRUARY, 1919.

GENERAL PREVALENCE.

THE total number of cases reported for the month of February was 11,737, giving a case rate per 100,000 population of 296.5. Excluding influenza and venereal diseases, 4,300 reports were received for the more common reportable diseases. The case rate being 106.1 as compared with 9,374 cases and a case rate of 253.8 for the corresponding month of 1918.

Diphtheria with 679 cases was the most frequently reported disease. Practically the same rate was obtained as for the corresponding month of 1918. The rates were respectively 17 and 17.3.

While no one city showed any alarming incidence, several, from the continuous reports of cases, must have had many different foci of infection in the form of unknown carriers, and only by intensive work can this be remedied with a diminution in the number of cases.

Scarlet Fever was reported in 651 cases, a case rate of 14.1 being shown.

The Gloucester outbreak has quieted down.

Typhoid Fever showed an increase for the month, 73 cases being reported, 23 of which occurred in Lawrence, 4 in one family in Boston and 4 in one family in Rockport.

Whooping Cough was reported in 363 cases, twice as many as in February, 1918, when 181 were reported.

Influenza fell off very rapidly, 6435 cases being reported in February.

Lobar Pneumonia likewise dropped from 1095 cases in January to 655 in February.

RARE DISEASES.

Anterior Poliomyelitis was reported from Boston, 1; Dedham, 1; total, 2.

Dysentery was reported from Boston, 2.

Epidemic Cerebrospinal Meningitis was reported from Boston, 3; Braintree, 4; Brockton, 1; Camp Devens, 1; Fall River, 1; Hudson, 1; Lawrence, 2; Lee, 1; Lynn, 1; Malden, 1; New Bedford, 1; Newton, 1; Northboro, 1; Peabody, 1; Somerville, 1; Webster, 1; Whitman, 1; Worcester, 2; total, 25.

Malaria was reported from Mansfield, 1.

Pellagra was reported from Haverhill, 1.

Septic Sore Throat was reported from Arlington, 2; Boston, 8; Fall River, 1; Haverhill, 2; Lynn, 1; Sharon, 1; Taunton, 1; and Somerville, 6; total, 22.

Trachoma was reported from Boston, 2, and Cambridge, 1; total, 3.

RED CROSS CONFERENCE AT CANNES.

THE Committee of Red Cross Societies authorizes the following statement:

"With a view of preparing a program to relieve suffering and combat disease in the general interest of humanity, the Committee of Red Cross Societies has called a conference of leading experts of the world to be held at Cannes, France, beginning April 1st. Below is a list of men, each a foremost specialist in his chosen field, who have been invited to attend the conference as representatives of their respective countries, France, England, Italy, Japan and the United States.

FRANCE.

Prince Paul Emile Roux, Professor; Director Pasteur Institute, Paris.

Dr. F. Widal, Physician to Hospital Cochin, Paris.

Major Edouard Rist, Service de Sant. France.
Dr. Calmette, Pasteur Institute, Lille, Director.

Dr. Leon Bernard, Paris.

Professor Paul Courmont, Lyons.

Dr. Charles Louis Alphonse Laveran, Professor Protozoology, Pasteur Institute, Paris,
Dr. Milian, St. Louis Hospital, Paris.

Dr. Amand Delille, Paris.

Dr. Maurice Pehn, University of Lyons.

ENGLAND.

Sir William Osler, Regius Professor of Medicine, Oxford University.

Sir Walter M. Fletcher, Secretary of Medicine, Research Committee.

Colonel S. Lyle Cummins, Advisor in Pathology, B.E.F.

Sir Robert Phillips, Edinburg.

Sir Arthur Newsholme, London.

Dr. F. W. Menzies, Principal Assistant Medical Officer London County Council.

Lt. Col. Sir Ronald Ross, Consultant for Malaria, British Army, Professor of Tropical Sanitation, University of Liverpool.

Col. L. W. Harrison, R.A.M.C., London.

Sir Wm. Leslie Mackenzie, Medical Member Local Government Board for Scotland, and Royal Commission on Housing.

Dr. Truby King, New Zealand.

ITALY.

Dr. Ettore Macchiafava, University of Rome.

Lt. Col. Aldo Castellani, University of Naples.

Dr. Giuseppe Pastanelli, University of Rome.

Col. Caesar Baduel, Florence, Chief of Bureau of Sanitary and Local Welfare, Italian Red Cross, Rome.

Dr. Poli, University of Rome.

Dr. Ducroy, University of Pisa.

Dr. Valagussa, University of Rome.

JAPAN.

Dr. Ryotaro Inaba, Director of Hygiene Laboratory, College of Medicine.

Dr. Kiyoshi Shiga, Professor Imperial Institute for Infectious Diseases, Tokio.

Dr. Hideyo Noguchi, Rockefeller Institute for Medical Research, New York.

AMERICA.

Dr. William Henry Welch, Director, School of Hygiene and Public Health, Johns Hopkins University.

Dr. Simon Flexner, Director Laboratories of Rockefeller Institute for Medical Research, New York.

Dr. Hermann Michael Biggs, Public Health Commissioner, New York State.

Dr. Edward Robinson Baldwin, Director of Edward L. Trudeau Foundation for Tuberculosis, New York.

Dr. Theobald Smith, Director of Animal Pathology, Rockefeller Institute for Medical Research.

Dr. Wickliffe Rose, Director General International Health Board, Rockefeller Foundation.

Col. George Walker, U. S. Army, Fellow American College of Surgeons in charge of Venereal Diseases, A.E.F.

Col. Homer Swift, U. S. Army, Consultant in Medicine, A.E.F.

Col. William F. Snow, A.E.F. Army, President of Association of State and Provincial Boards of Health of North America.

Dr. Luther Emmet Holt, Professor Diseases of Children, College of Physicians and Surgeons, New York.

Dr. Samuel Hamill, Professor Diseases of Children, Philadelphia Polyclinic and College for Graduates in Medicine; Director Child Welfare for State of Pennsylvania.

Dr. Fritz Talbot, Chief of Children's Medical Department, Massachusetts General Hospital Boston; American Red Cross representative.

Dr. Livingston Farrand, formerly President of the University of Colorado; Director General American National Red Cross.

Major A. M. Garvin, Chief, Bureau of Tuberculosis, A.R.C., France.

Major William Palmer Lucas, Professor of Pediatrics, University of California, Medical School; Chief of Children's Bureau, American Red Cross, France.

Col. Richard P. Strong, U. S. Army, M.D., Sc.D., Director Department of Medical Research and Intelligence, American Red Cross; Professor Tropical Diseases, Harvard University Medical School.

ADDITIONAL REPRESENTATIVES.

Asst. Surgeon General N. S. Cummins, U. S. Public Health Service now in France.

Col. F. F. Russell, Representing War Department in connection with Public Health Conference.

Lt. Col. Lindsay R. Williams, U. S. Army.

Acceptances have already been received from a majority of those to whom invitations have been sent and it is expected that a favorable reply will have been received from the others before April 1st. These first conferences at Cannes are preliminary, on the part of the Committee of Red Cross Societies to formulate and to propose to the Red Cross Societies of the World an extended program of Red Cross activities in the interest of humanity.

The first conference will have to do with the preparation of a program which deals with the organization of the International Council and Bureau of Hygiene and Public Health, which will consider the work to be undertaken in connection with the prevention of epidemic dis-

case, tuberculosis, venereal disease and child welfare. Specialists who will attend are the recognized authorities on these subjects. As a result of these conferences a complete program will be made which will deal with the latest and best means to relieve suffering and combat disease.

This program will be submitted at a conference of all Red Cross Societies to be held in Geneva thirty days after Peace is officially declared. The call for this later conference was issued February 13th by the International Red Cross at Geneva. Announcement of the formation of the Committee of Red Cross Societies was made in Paris about three weeks ago. It has established headquarters at Cannes, with administrative headquarters at No. 2 Place de Rivoli, Paris. The Committee is composed of representatives of Red Cross Societies of France, Great Britain, Italy, Japan, and the United States, with Henry P. Davidson, formerly Chairman of the War Council, American Red Cross, as Chairman.

Correspondence.

THE WRONG KIND OF "GROUP MEDICINE" IN SMOLLETT'S TIME.

31 Massachusetts Ave., Boston, Mass.,
March 29, 1919.

Mr. Editor:

The devious ways employed in acquiring a fashionable practice in Smollett's time are well set forth in one of his masterpieces, "Ferdinand, Count Fathom." In all probability it is from Smollett's direct observation of "Men, Manners and Medicine" of the times, though his chief character was supposed to have flourished considerably before Smollett's time of medical practice.

Fathom, his finances reduced to a low ebb, decided to take up the practice of physic, though his qualifications for practising this art consisted only in his own shrewdness and keen judgment of the foibles and eccentricities of the fashionable women of the period. After considerable success as a fashionable practitioner at Tunbridge Hot Wells, he realized he must follow the visitors back to London if he wished permanently to recoup his finances.

His first care was to provide himself with the handsomest and showiest coach which he could buy. "A chariot was not set up for the convenience of a man sinking under the fatigue of extensive practice but as a piece of furniture every way as necessary as a large periwig with three tails, and a physician, let his merits in other respects be never so conspicuous, can no more expect to become considerable in business without the assistance of this implement than he can hope to live without food, or breathe without a wind-pipe. None of these observations escaped the penetrating eye of Fathom, who, before he pretended to seat himself in this machine made proper inquiry into all the other methods with a view to keep the wheels in motion. In his researches he found that the great world was wholly engrossed by a few practitioners who had arrived at the summit of reputation, consequently were no longer obliged to cultivate those arts by which they rose, and that the rest of the business was parcelled out into small enclos-

ures occupied by different groups of personages, male and female, who stood in rings, and tossed the ball from one to another, there being in each department two sets, the individuals of which relieved one another occasionally. Every knot was composed of a waiting woman, nurse, apothecary, surgeon, and physician, and sometimes a midwife was admitted to the party and in this manner the farce was commonly performed: A fine lady, fatigued with idleness, complains of the vapors, is deprived of her rest, though not so sick as to have recourse to medicine. Her favorite maid, tired with giving her attendance in the night, thinks proper for the benefit of her own purpose to complain of a violent headache, and recommends to her mistress a nurse of approved tenderness and discretion, at whose house (in all likelihood) the said chambermaid hath oft given the rendezvous to a male friend. The nurse, well skilled in the mysteries of her occupation, persuades the patient that her malady, far from being slight or chimerical, may proceed to a very dangerous degree of the hysterical affection unless it be nipt in the bud by some very effective remedy. Then she recounts a surprising cure performed by a certain apothecary, and appeals to the testimony of the waiting woman who, being the gossip of his wife, confirms the evidence and corroborates the proposal. The apothecary being summoned, finds her ladyship in such a delicate situation that he declines prescribing, and advises her to send for a physician without delay. The nomination of course falls to him, and the doctor being called, declares the necessity of immediate venesection, which is accordingly performed by the surgeon of the association."

It is not to be wondered at that Fathom soon achieved a great success in this unholy form of "group medicine," and certainly became a good rival in fiction of Perkins of Metallic Tractor fame who, years after Smollett's time, relieved the aristocracy of untold wealth.

Very truly yours,
WILLIAM PEARCE COUES, M.D.

SOCIETY NOTICES.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY.—The Annual Meeting of the Society was held at the American House, Boston, on Wednesday, April 16, 1919, at 11.00 A.M. The annual oration was delivered at 12 o'clock, noon, by Dr. James W. Sever, of Cambridge. Subject: "The Medical Aspects of the Workmen's Compensation Act."

CHARLES W. ADAMS, Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting of the Suffolk District Medical Society will be held April 30, 8.15 P.M. at the Boston Medical Library, 8 The Fenway.

Speakers:

Dr. David L. Edsall, "Some Relations of the Practitioner to Industrial Medicine."

Dr. Cecil K. Drinker, "An Unusual Type of Metallic Poisoning."

J. RAPST BLAKE, M.D., President.
GEORGE R. MINOT, M.D., Secretary.

CENSORS' MEETING.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 1, 1919, at 4 o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least two weeks before the examination.

GEORGE R. MINOT, M.D., Secretary.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.—The Censors of the Essex South District Medical Society will meet at the Salem Hospital, May 1, 1919, at 4 P.M., to examine candidates for admission to the Massachusetts Medical Society. Application blanks can be obtained from the Secretary, Dr. H. P. Bennett, 41 Lewis Street, Lynn.

The Boston Medical and Surgical Journal

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Original Articles.

A YEAR'S STUDY OF THE MATERNITY WARD AT THE BOSTON CITY HOSPITAL.

By BESS LYNDE RUSSELL, BOSTON,

Department of Medical-Social Work, Boston City Hospital

Organization of Real Maternity Service in the Boston City Hospital. Prior to October 1916, while a good many pregnant women came to the Gynecological Out-Patient seeking diagnosis and advice, the majority had to be sent elsewhere for treatment during confinement, as there was no adequate care for them in the wards of the hospital.

In October, 1916, a maternity ward of 20 beds was opened, as part of the regular gynecological service.

Time. Beginning with October, 1917, we undertook a social case study of all maternity patients admitted to the ward during a period of twelve months.

Aim. The aim of this pioneer study of maternity as undertaken in a big, municipal hospital was to gain such information as to the nature of the medical-social problems found as might serve for the basis of future case work with similar groups.

Method of Approach. A schedule of suggestive headings was outlined, and each patient admitted to the ward during twelve months was interviewed. When necessary the purpose and need of obtaining the information was explained to the patient, and, almost without exception a full history was cheerfully and freely given. I think this was largely owing to the tactful method of approach on the part of my assistant workers.

Disposition of Intensive Social Problems. Throughout the study such patients as needed intensive or emergency social treatment were dealt with by my assistant, with the exception of the problems involving unmarried maternity and illegitimacy, which were referred to me.

Out of 459 cases studied 219 (48%) were dealt with intensively.

Unrecorded work To many patients we gave some form of social service, which we did not record. A large group whom we referred to the Baby Hygiene Association would be included here. In connection with the visits which were made to each home, a great deal of advice and instruction was given both as regards the mothers and the babies.

Admissions. During the 12 months 465 patients were admitted to the maternity ward, 459 of whom were made a subject of our study (6 were missed during a quarantine for scarlet

fever). The average number per month was 38%. The greatest frequency of admissions occurred during the summer.

Locality. That the Boston City Hospital is fulfilling its object as a municipal institution is evidenced by the following data: Four hundred and nineteen, or 91+%, were admitted from 15 Boston districts, leaving but 8+% suburban and outer state vicinities.

The three districts lying in closest proximity to the hospital contributed 58+% of total admissions; South End, 109; Roxbury, 95; Dorchester, 63.

Length of Stay and Convalescent Care. In analyzing the length of time spent in the hospital ward by each patient, an effort was made to estimate roughly the average period so spent. A chart, here omitted, shows that out of a total of 403 patients, 201 (49%) remained in the hospital only between 10-11 days, 291 (72%) remained 10-14 days, 86 (21%) remained over two weeks.

Short Time Hospital Care, versus Inadequate Convalescent Care. Analysis of the data showed conclusively that many patients remaining for this short time period would not receive adequate maternity care.

Home visits to 164 homes of this 10-11 group showed that while 50% were living under relatively good conditions, 49+% of the patients were unable to cope with the question of adequate post-natal convalescent care.

It is of interest to note that of this group with poor homes, 32% had been previously known to one or more charitable agencies.

Turning to our community resources to supplement this home lack, we find them practically nil. Our Boston City Hospital Convalescent Home does not receive mother and baby, and only one bed available for such care is known to the writer in metropolitan Boston.

Consideration of the civil state of this short period group shows that 39 or 19+% gave birth to illegitimate children. Many of these were young girls, giving birth to their first baby, having had little pre-natal care, and had suffered much mentally and physically in their endeavor to hide their pregnant condition. Many had worked up to the date of labor, often without sufficient food or clothing and without social outlook as they faced discharge from the hospital. The social problem of reaching parents or men responsible, and persuading such to accept this often double responsibility, or of

interesting charitable agencies to provide new homes, can scarcely be well dealt with, in this short 10-11 day period.

If it is fair to assume that labor is often more protracted and severe during first confinement, it may be of interest to note that of 201 cases studied in the short term group, 47+% were confined for the first time.

Need of Longer Hospital Care. Since a 10-11 day maternity period within the hospital implies outside convalescent care in order to complete a satisfactory maternity, and since nearly half of our homes are inadequate to consummate this care, with nearly a third somewhat dependent on charity, and our community absolutely lacking in convalescent resources; with less than one-third of our mothers receiving pre-natal care, with nearly 20% of our babies born illegitimate, and with nearly one-half of our patients undergoing confinement for the first time, it is not logical for the hospital social worker facing conditions on the maternity ward to ask frequently for a longer term of hospital care, although realizing to the full the great pressure that there is at the admission desk.

Need of Adequate Community Care. As many patients confined in our ward do not pass through our maternity clinic in the Out-Patient, but apply directly to the ward for admission when in labor, an analysis of the localities from which these patients came was made, with the hope that the District Nursing and Baby Hygiene Associations, who so actively undertake pre- and post-natal work throughout Boston, might possibly see some way to reach more of such cases, especially in the heaviest districts quoted.*

Is there not also a suggestion here for closer coöperation from other charitable agencies throughout Boston, to help Boston citizens to be well born? Maternity Homes, notably the Salvation Army Resene Home and the Talitha Cumi Home, have generously helped in these emergencies with our unmarried mothers and their babies, but we need more assistance from other maternity homes. Can they not broaden their work when the need is so great? The Society for Helping Destitute Mothers and Infants took many such girls for us last year, but the closing out of that Society in January, 1919, has left our inadequate resources for convalescence more meagre and deplorable than ever

* As I have showed below, 58% of all our maternity patients came from the three districts nearest to the hospital, namely, South End, Roxbury, and Dorchester, and only 8% from outlying places.

in regard to this particular illegitimate group. And for those in the married group! What agencies in Boston can see their way to offer such convalescence? No one is doing this job. Yet we offer a great need which awaits fulfillment.

Pre-Natal Care. In a group of 400 patients admitted to the maternity ward, 262, or 60%, had received no pre-natal care; 18% received such care at our own Out-Patient Department; 17% received instructions from private physicians; less than 1% from other clinics. Therefore only about 36% of the patients in our maternity ward had received pre-natal instruction. This situation ought to be remedied when we realize that over against this low per cent. of pre-natal care are the following facts:

- a. 189 patients, or 42%, of our admission group came for first confinement (presumably a group ignorant concerning the hygiene of pregnancy).
- b. 101 patients, or 22%, admitted having had previous miscarriage.
- c. 18 patients, or 4%, admitted having had more than one previous miscarriage.
- d. 26 patients had babies, still born or died before discharge of mother from hospital.
 1. Of 85% of the babies who died,
 - 62% were premature,
 - 19% were still born,
 - 4% had congenital syphilis.
- e. Of 9 patients who died, over 50% died with maternity complicated by eclamptic or pulmonary symptoms.†

Suggestions. 1. Would posters, advertising the existence and use of our own pre-natal clinic, placed in other clinics frequented by women coming to the hospital, at the entrance lodge, and in the room where relatives consult doctors, bring this pre-natal resource to the attention of prospective mothers, liable to be confined at our hospital, but not attending our gynecological clinic?

Would settlement houses, Associated Charities' offices, children's agencies, etc., in our heaviest districts (South End, Roxbury, and Dorchester) be willing to place such posters conspicuously, for the instruction of their people?

Many of our mothers and babies are referred to the Milk and Baby Hygiene for post-natal care. Is there any way that this Society, in the succeeding months of contact, could tie up

our patients in the coming pregnancies for pre-natal care with the Instructive District Nursing Association, thus insuring such instruction for more of our 60% now without any pregnancy care?

Frequency of Confinement. The statistics gathered concerning the frequency of confinement, plus a slight insight into the frequency of pregnancy, are most superficial. The only value being in their suggestiveness for further study.

Out of the total of 459, in 13 cases information was not obtained. Hence on a basis of 446 patients:

- 189, or 42%, were confined for the first time.
- 67, or 15%, were confined for the second time.
- 34, or 8%, were confined for the third time.
- 156, or 35%, were confined, on a sliding scale, fourth to fifteenth time.

In regard to miscarriages, 101, or 22%, admitted having previous miscarriage.

21, or 4%, admitted having had more than one previous miscarriage.

Of the 21 admitting more than one miscarriage, the following figures have no scientific value, but are of suggestive interest:

21 patients admitted 69 miscarriages, an average of 3 $\frac{1}{2}$, with families ranging from 0-11 children.

15 patients, or 71%, had 2 or 3 miscarriages.

6 patients, or 29%, had 4-6 miscarriages.

Also it was found that mothers having two or three children in this small group, more frequently miscarried.

10 patients, or 48%, having two or three children, admitted 31 miscarriages, or 45% of the entire number (69).

Since 156, or 35%, of our patients are young girls of 19-23 years; since 267, or 61%, of our patients are between 19-28, and since 65% are between 14-28, thus indicating a group with more youthful experience in life, it is undoubtedly true, when correlated with so high an experience as 42% undergoing first confinement, 22% admitting miscarriage, and 4% admitting numerous miscarriages, that educational propaganda would not be out of place in our maternity ward, during the latter days of maternity care. Literature on pre- and post-natal care might be intelligently given out by a volunteer worker, who might also have charge of a model layette, for inspection by these

* This represents only 7 months' statistics as other hospital data are not available.

mothers, and possibly with the opportunity of securing materials or patterns, or at least the proper information for securing them, later for themselves.

Racial and Religious Background. In order to better appreciate the needs and desires of our patients it seemed well to get at least a bird's-eye view of the traditions and environment from which they sprang.

Nationalities. Using as a basis of our analysis statistics compiled by the Bureau of Statistics for the Commonwealth of Massachusetts for the decennial census of 1915, we find that they tally very closely with the percentages arrived at in this study, again proving the City Hospital a truly municipal institution.

Massachusetts Statistics. Foreign, 36%; native, 64%.

Survey Statistics. Foreign, 37+%; native, 62+%.

Taking the birthplace of the father with that of the patient, in this group of patients confined in our maternity ward, there were representatives of 29 nationalities. It may be of interest to learn that our American born citizen is the most frequent user of our maternity beds, and those of Irish extraction held second place (121 patients, or 26%).

154 patients, or 33%, were Americans.

131 patients, or 28%, were one generation.

174 patients, or 37%, were foreign born.

Civil State. In the analysis of 463 patients, 79%, or 379, were married (including 3% illegitimate mothers).

20%, or 74, were single

In studying the age groups of the illegitimate mothers with that of the whole group, it was found that the former grouping fell largely into the age limit (19-23 years), and even exceeded the total so grouped by 42%.

35% in the whole group 19-23 years.

61% in the illegitimate group 19-23 years.

In the calculation of a slightly larger group (18-23 years) were found two-thirds of the unmarried mothers giving birth to more than one illegitimate child. In this latter group of the promiscuous girl only two exceeded the second child. Both young girls had three illegitimate children and several miscarriages. One was a feeble-minded street walker, the other a graduate of a secondary school, and of interesting personality.

Age. Perhaps here might be included a word regarding the age of our patients, also show-

ing comparison of the whole and illegitimate groups:

WHOLE GROUP.

4%	14-18 years
35%	19-23 years
25%	24-28 years
20%	29-33 years
17%	over 33 years

ILLEGITIMATE GROUP.

11%	14-18 years
61%	19-23 years
17%	24-28 years
8%	29-33
3%	over 33 years

thus showing the impressive figure.

(Roughly) 65% of patients ranging from 14-28 years and in the unmarried group.

(Roughly) 90% of patients ranging from 14-28 years.

Hence it is clear, both in regard to the married and the unmarried patients, how large a young girl problem we are facing in our maternity ward.

Home Conditions. In the effort to make the home conditions of our patients vivid and of practical value, an enormous amount of data has been worked over, and finally reduced to the following salient facts:

1. A home visit was made to each home in order (1) to gain a general idea of the home from the standpoint of the landlord and the patient; (2) to lend perspective and thus aid in sensing more acutely the nature of the social problems likely to confront us in the oncoming years, thus allowing a more intelligent utilization of existing resources; and (3) a voicing of a need of yet intangible resources awaiting only an interpretation to the benevolently inclined, so as to afford new opportunity for reconstructive aid. For instance, the figures conveying the need of convalescent care were made use of before the publication of this report as an answer to an offer of a well-equipped home for charitable purposes in Boston.

2. *The Home from the Landlord's and Patient's Endeavor.*

LANDLORD.

42%	good homes
40%	fair homes
18%	poor homes

PATIENT.

55%	good homes
31%	fair homes
13%	poor homes

Roughly estimated, 50% of our patients therefore enjoyed good homes:—the housewives showing a capacity for good housekeeping in excess of their environment.

About 15% of our patients endured poor home conditions, and 35% fair, tending to show that half of our people might not be equipped for pregnancy and maternity, without the aid of charitable help. Surely this emphasizes the needs of maternity care in hospitals.

3. Having gained the impression that more than one-half of our patients were enjoying fairly good homes, it seemed pertinent to gather data as to rent, quarters, number in the family, occupation of the husband, and his wages, in our effort roughly to substantiate this conclusion of self-support among the major group of our patients as well as to illuminate the kind of needs found among those less self-reliant.

4. *Rent.* In a total of 368 patients,

36%	paid \$11-\$15 monthly rental
64%	paid \$11-\$20 monthly rental
14%	paid \$6-\$10 monthly rental
20%	paid over \$20 monthly rental

5. *Number of Rooms.* Out of 406 homes considered,

13%	lived in a single room (largely unmarried mothers).
25%	lived in 4 rooms.
43%	lived in 4-5 rooms.
17%	lived in over 5 rooms.

Hence it is interesting to note that 64% paid \$11-\$20 rent; as over against 65% who occupied 4 or 5 rooms.

6. *Occupation of Patients.* As would be expected, housewives formed the largest occupational group. Based on 458 patients, 74% were housewives. The remaining 26% would be nearly representative of the unmarried mother group amongst whom we find more than half in the domestic and factory occupations.

DATA ON THE FATHERS.

7. *Occupations of Fathers.* Turning to the occupation of the fathers of the babies born in our maternity ward, it was learned in 448 instances that:

52%	did work requiring some skill.
13%	were in the service of the United States.
17%	were teamsters, etc.
10%	were laborers.
8%	miscellaneous.

8. *Age of Fathers.* It seemed of interest to look into the age range of the fathers. Of 420 fathers considered,

28%	were between 24-29
51%	were between 24-35
34%	were under 24
36%	were over 35

Ages of Fathers and Mothers. In comparing the ages of the mothers and fathers in the largest groups we found,

61%	of patients 19-28 years
51%	of fathers 24-35 years

showing that the range of fathers' ages were much older than those of the patients.

9. *Family Budget versus Number in the Family.* An effort was made to work out the family budget in relation to the number in the family, hoping to give a practical idea of the standard of living found within the patients' homes.

The budget was compiled on the basis of the father's wages plus the amount contributed by other members of the family, and also in relation to those known to charitable agencies.

352 budgets were studied.

312 proved to be apparently complete budgets.

40 proved to be incomplete.

a. Of the 40 incomplete budgets 55% were known to charitable agencies.

b. Of the 312 apparently complete budgets 18% were known to charitable agencies, three-fifths of whom were chiefly unmarried mothers.

Leaving therefore (exclusive of the unmarried group) 273 patients, of whom only 7% were known to charitable agencies.

10. *Number in Family.*

40% were members of the 2-3 family group.

11% were members of the one-family group.

25% were members of the 4-5 family group.

23% were members of the 5-family group.

Hence 65% of the patients were members of the 2-5 family group.

11. *Average Budget versus Average Number in Family.* The next logical step seemed to be the analysis of the "number in the family" by the family budget, and it was found that the average budget was \$22 per week among 202 patients, or,

64% of patients studied had average budget of \$22 per week.

8% of patients studied had average budget of over \$25 per week.

By excluding the unmarried mother group and the 7% known to charitable agencies, it leaves 56% of our patients self-supporting on average budgets ranging from \$21-\$32.

Since of the 40 incomplete budgets, 18 were unknown to charities, it is probable that some of these were also self-supporting; also it is probable that some patients previously known to charitable agencies were self-supporting while in our maternity ward. Hence it is probably a conservative estimate to say that about 60% of our patients were probably self-supporting.

Helpful Comparisons: Self-Support versus Home Conditions. Having made the contention that about 60% of our patients were self-supporting, the following comparisons tend to substantiate it:

60% self-supporting as compared with 55+% living under good home conditions.

60% self-supporting as compared with 50% paying rent over \$16 month.

60% self-supporting as compared with 60% living in 4 rooms or more.

60% self-supporting as compared with 52% of patients' husbands doing skilled work.

Hence 55% good homes, the 50% paying substantial rent; the 60% living in larger quarters; the 52% having skilled husbands tallies so closely with our rough estimate of 60% self-supporting, that it is probably fair to conclude that over half of our patients on our maternity ward come from homes maintaining themselves in comfortable independence.

12. *Patients Known to Other Charitable Agencies.* Having analyzed the self-reliant group, it might be well roughly to sum up the outstanding points among the more or less dependent patients. On a basis of 459 patients,

33% had been previously registered as known to 57 charitable agencies.

An analysis of the agencies show that out of 50 used,

20 were representative of medical service.

22 were representative of rehabilitation service.

6 were representative of correctional service.

3 were representative of legal service.

1 was representative of patriotic service.

Therefore, an analysis of the statistics show that,

46+% were known for medical or patriotic reasons.

43% were known for cruelty or family reasons.

The agencies most frequently used were,

Instructive District Nursing

Association 30 times

Associated Charities 30 times

Red Cross 16 times

Overseers of the Poor 15 times

Society for Prevention of Cruelty to Children 12 times

Baby Hygiene Association .. 11 times

Under the groupings (medical and patriotic) and (cruelty and family) in the former group, the majority were usually known to but one agency, while those in the latter group were oftener known to many agencies.

Hence it would appear that of the 33% known to other charities that one-half, or

16 $\frac{2}{3}$ % were known for medical or patriotic reasons

16 $\frac{2}{3}$ % were known for cruelty or family reasons

Considering for a moment this latter group, those seeking material aid, it is again seemingly substantiated by our figures on poor homes, small rentals and inadequate quarters.

16% needed rehabilitation as compared with 13% living in poor homes

16% needed rehabilitation as compared with 14% paying \$6-\$10 month rental

16% needed rehabilitation as compared with 13% living in a single room.

Would it then be fair to assume from the

above statistics regarding home conditions that, (roughly)

60% of patients self-supporting

33% of patients somewhat dependent on charity

1/2 for medical and patriotic reasons

1/2 for cruelty and family reasons

7% of patients were unknown

SOME SOCIAL SNAPSHOT.

The Girl Lodger with Syphilis. Ida May was sent to an industrial school at 13, at the time her widowed mother was sentenced to "jail" for promiscuous conduct. In the industrial school Ida May received secondary educational advantages, while also accumulating much that was degrading from her other unfortunate companions. After seven years of repressed institutional life, she was "let loose" in our South End lodging district, companioned only by her sister, also an institutional product, and by now a street walker. In this eleven months our patient had had a still born baby and had acquired syphilis.

What could we do to help? Finances to cover partial cost of treatment were secured from her home State (outside of Massachusetts) and that treatment has been regularly and faithfully followed for the past 16 months. A safe guarded environment, new friends, wholesome recreations, "lifts" in times of trouble, and friendship have helped to make a balance wheel for our girl lodger.

The Fourteen Year Old Mother. Gifts of candy and ice cream offered by a man of 40 contributed towards the motherhood of one little high school student of 14. A tubercular mother, a miserly father, a sister also an unmarried mother at 17—proved too frail a protection for the girl mother. Friends of her own faith were found who interested themselves and were able to provide convalescent care for both mother and baby, later boarding the baby in a foster home. Our patient was then returned to high school life while the father of the baby was arrested and imprisoned on a charge of statutory rape.

A Successful Belated Marriage. Mary's mother died when she was 12 years old, leaving her to the kindly care of her father who was,

however, a bit too fond of his "glass." She had had few advantages, yet had chosen decent companions and had sustained a good reputation. While keeping house for her father without supervision, she received for 4 years attentions from a self-respecting lad, whose family prided themselves on maintaining superior social standards.

At 19 Mary became pregnant, but marriage was debarred through the influence of the boy's sisters, who persisted in the idea of their social superiority, even procuring counsel to fight the girl's bastardy charge.

Mary was dependent, clinging, lacking the power of self expression, as did also her fiancé. Hence the interference by an outside force was necessary to combat the dominant influence of the sisters, before the real desires of the young people could be realized and their child safeguarded. Fifteen months of happy married life proves that our social coöperation was of wholesome value.

The Feeble-minded Prostitute. Jennie's family were all respectable and self supporting, yet at 10 our patient was found to be promiscuous with young boys, and on admission to our hospital, in her young womanhood, had had 3 babies and several miscarriages.

Court fines and imprisonment had proved useless in checking Jennie's career. A Binet test, resulting in the diagnosis of feeble-mindedness, made during her incarceration in prison, rendered it possible to hold this girl after a recent arrest in a vice raid through the court, in detention houses, pending permanent care in one of our State Schools for Feeble-minded. Both Jennie and the community which she leaves will profit by this enforced segregation.

CONCLUDING REMARKS.

A Municipal Job. This study has demonstrated how truly our hospital is doing its municipal job:

1. Our cosmopolitan intake is almost identical with the Massachusetts census for 1915 in regard to native and foreign born.
2. Our Boston residents range well over 90%.
3. Nearly three-fifths of our patients come from our neighboring localities.
4. Our meagre 20 beds have harbored almost 500 patients within the year, or an average of 38 per month.

5. A good out-patient clinic provides adequate pre-natal instruction.

A Need Only Partially Filled. The urgent need of adequate supplementary post-natal care is also demonstrated.

The Nature of Our Problem. One of the chief aims of this study was to determine, largely, the nature of the medical social problems found in our maternity ward.

MEDICAL.

The study demonstrates that medically a large proportion of the patients are normal maternity cases. The complicating diseases, such as eclampsia, pulmonary troubles, venereal diseases, and mental defects, plus the reactions on the unborn infant, including a significant premature group, suggested largely preventable causation through avenues of pregnancy hygiene and better living conditions.

SOCIAL.

To gain an accurate idea of the social problems presented, our intensive maternity cases for the year were reviewed (nearly half of the total 452 admissions) and the following problems were noted:

1. Need of post-natal care—in at least 50% of cases.
2. Need of pre-natal care—in at least 60% of cases.
3. Family problems, including, in 53 instances, desertion, widowhood, incompatibility, dependency, motherlessness.
4. Unmarried maternity—in 101 instances.
5. Pathological conditions—in 28 instances.

Illegitimacy. Perhaps a little further insight into our most subtle social problem, the unmarried mother, might be of interest. The following percentages suggest some of the situations involved:

- 25% had 2 or more illegitimate children, two-thirds of whom were in the age group 18-23 years.
- 5% were married with illegitimate children.
- 9% had syphilis.
- 5% had gonorrhea.
- 8% were feeble-minded (by test).
- 17% had babies die at, or soon after, birth.

In regard to the social disposition of this group,

84% received outside charitable aid through our assistance.

16% were readjusted to their environment.

28% of unmarried fathers were dealt with, six-sevenths of whom gave some financial assistance.

From the viewpoint of our social activity, 82% received intensive attention from the workers.

39% are still in touch with the workers.

41% were ultimately transferred to other charitable agencies.

48 different agencies is a minimum estimate of cooperating usefulness.

a. Those most often used are named:

1. Milk and Baby Hygiene.
2. Church.
3. Society for Helping Mothers and Babies.
4. Associated Charities.
5. State Alienists.
6. State Board of Charity.

Outstanding Needs Awaiting Reconstruction.

By briefly summarizing the analysis of the data, the following facts were found to be reckoned with (roughly speaking):

$\frac{1}{2}$ of the 459 received but 10-11 days' hospital care,

a. With $\frac{1}{2}$ of their homes inadequate for supplementary convalescence.

b. With no community convalescent resources available.

c. With one-third of the patients somewhat dependent on charity.

One-fourth of our patients were illegitimate mothers.

One-half of our patients were facing first confinement at often a youthful age.

One-fourth of our patients admitted previous miscarriage.

Three-fifths of our patients had no pre-natal care, and probably a majority of the mortality in our mothers and infants was due to preventable causes.

Reconstructive Suggestions. Since our patients largely fall in a youthful group, it is safe to say that much can be done for them, by educational propaganda work, in relation to

(1) pre-natal, and (2) convalescent care, (3) in relation to unmarried maternity, and (4) venereal disease.

Pre-natal care could be brought to the attention of more pregnant women by advertisement of our pre-natal clinics:

1. In our hospital clinics and consultation rooms.

2. In offices of our coöperating charities, especially in our neighborhood districts.

3. By suggestion to the Instructive District Nursing Association and Baby Hygiene Association, who are closely associated with mothers and babies.

4. By distribution of literature on the ward.

Pre-natal care could be more often realized:

1. By request for longer stay on ward in particular cases.

2. By requesting the opening of a ward for mother and babies at our City Convalescent Home.

3. By wider use of our maternity home for the unmarried group.

4. By appealing for the opening of new convalescent homes by the benevolent.

5. By distribution of literature.

6. By presenting model layettes on the ward, with instructions.

Placing out care might be extended:

1. By appealing to existing agencies to widen the scope of their work.

2. By interpreting the need, stimulate the growth of new endeavors.

Venereal Disease might be diminished:

1. By close coöperation with the State Board of Health, thus maintaining continuous treatment for gonorrhea and syphilis.

2. By education of the individual.

The problem of unmarried maternity might begin to face solution:

1. By recording background data and psychological insight through intensive records, thus compiling material suitable for causative and constructive research study.

2. By personal service help some unmarried mothers in their effort to make their greatest contribution as citizens.

And the last suggestion might be—to keep a balanced point of view in facing our maternity work, and while remembering our many serious problems, and while earnestly appealing for more adequate coöperation from our com-

munity resources, and while appealing for new avenues of reconstruction to be opened for our patients, we might also recall the optimism indicated by rather substantial comparative proof, that at least 60% of our patients are receiving adequate maternity care, and are maintaining apparently stable home conditions, wherein to rear the citizens born at our Boston City Hospital.

ROENTGENOGRAPHY OF THE KIDNEYS.*

By A. E. O'CONNELL, M.D., WORCESTER, MASS.

Röntgenologist, St. Vincent Hospital.

A ROENTGENOGRAM is a record of densities. The kidneys, with their surrounding fat, are much denser than the other tissues of the body and therefore can be shown in a modern roentgenogram. They cast bean-shaped shadows on each side of the spine opposite the twelfth dorsal and three upper lumbar vertebrae. The shadow of the twelfth rib crosses the renal shadow at the juncture of its middle and upper thirds and the hilum of the kidney is on the level of the second lumbar vertebra and is about two inches from the midline of the body.

Before making a roentgen examination of the urinary tract it is very important that the patient's intestines be free from feces and gas. Gas is very transparent to the rays, and causes dark areas in the roentgenograms, which hide the kidney shadow. The preparation should be the same as for a major operation. The patient should receive two ounces of castor oil the night before, no food and a large cleansing enema the day of the examination.

The entire urinary tract should be examined in all cases. There are many reasons why this should be done. Calculi are frequently found in both kidneys; a stone may have passed down into the lower ureter or bladder; the presence of a kidney on the opposite side can be shown, which information is valuable to the surgeon if it becomes necessary to remove one kidney.

The majority of the patients coming to the roentgen laboratory for kidney examination are sent by their attending physician to determine the presence or absence of calculi. The reader believes that all calculi except those of the pure uric acid variety (which are very rare

* Read before the Worcester District Medical Society, Feb. 12, 1919.

and may be ignored) can be shown in a roentgenogram which gives the following detail: shadows of the last two ribs, the psoas muscle, the transverse processes to their ends, and the outline of the kidney. This detail can be obtained in nearly all cases. A roentgenogram of a very stout patient may fail to disclose the presence of a small stone. This is due to the lack of contrast between the shadow of the small stone and the shadows of the other tissues of the body in such a patient. These small calculi are usually non-surgical stones. Nearly all renal calculi are of mixed variety. Their shadows vary in density according to the predominance of the elements. The oxalic variety gives the densest shadows, the phosphatic next, and lastly the uric acid variety.

Symptoms of renal calculi vary with the location of the stones and the amount of occlusion which they cause. A stone in the body of the kidney or stone in the pelvis of the kidney which does not cause obstruction may give only symptoms of dull aching pains in the lumbar regions. When the stone causes occlusion, the patient suffers from renal colic. The pain is first felt in the lumbar region and descends down the line of the urinary tract. Attacks of renal colic may occur at intervals varying from a few minutes to hours. Frequent micturition is often a prominent symptom. A small stone may be in the lower ureter for years and cause but slight discomfort at times. The urine usually contains blood, albumen, and pus cells. If the stone causes complete occlusion, the urine, of course, may be negative.

Shadows of renal calculi must be differentiated from shadows cast by other dense tissues of the body. Errors in roentgen diagnosis of calculi are nearly always errors of interpretation. It is not difficult to show the shadows of calculi—the real difficulty is the differentiation between shadows. Kidney stones must be differentiated from gall stones, calcified mesenteric glands, masses of feces and foreign bodies in the intestine, increased ossification of the transverse processes of the vertebrae, and from the shadow of a skin tumor of the back. The pelvis of the kidney and the gall bladder are on the same level in the body. Therefore the shadow of a kidney stone and a gall stone may occupy the same position in a single antero-posterior roentgenogram. To determine whether the stone is in the kidney or gall bladder, either a lateral roentgenogram or stereo-

roentgenograms, which give perspective, must be made. To differentiate between a kidney stone and a gall stone is usually not difficult but requires considerable time and work. The shadow of a kidney stone is of uniform density, while that of a gall stone has a ring-shaped appearance, due to the greater density of the outer layer of the stone. A kidney stone gives a smaller and clearer shadow if the roentgenogram is taken with the plate at the back, while gall stone is smaller and more distinct with the plate at the anterior wall of the body. Lateral roentgenograms, if they show the shadow, are usually a sure means of differentiation between a gall stone and a kidney stone. Unfortunately the shadows of small calculi cannot always be shown in a lateral plate. Stereo-roentgenograms (plates taken from different angles and viewed in a stereoscope to give perspective) are of great value in such cases. The reader has had one case in which he could not positively say whether a shadow was cast by a gall stone or kidney stone. The probable explanation of this difficulty in the above-mentioned case was the close proximity of the kidney and gall bladder. Calcified mesentery glands cast bright shadows which must be differentiated from the shadows of calculi. The shadow of a calcified gland has a general appearance of mottling, with lack of central density. The shadow of a kidney stone is of uniform density. A lateral roentgenogram of a calcified mesentery gland will show the shadow anterior to the usual location of a kidney stone. Masses of feces and foreign bodies in the intestines can be ruled out if the patient has been properly prepared. If there is any doubt as to the diagnosis, a second preparation and roentgen examination will settle this. The shadow of a calculus superimposed upon that of a transverse process must be differentiated from a shadow due to increased density of the end of a transverse process. The latter condition is usually seen in a number of processes. A roentgenogram taken from a different angle will change the relative position of the calculus, while this will not result in the case of increased density of a transverse process. The reader has had one case and seen another reported where a shadow that might be interpreted as a calculus was cast by a pedunculated skin tumor of the back. Removal of the growth resulted in the disappearance of the shadow. Stereoscopic roentgenograms will, of

course, enable the roentgenologist to differentiate between these two conditions. A careful inspection of the patient's back should always be made previous to taking a roentgenogram of the kidney.

Most renal calculi can be positively diagnosed from the shape and character of their shadows in a roentgenogram. When there is any doubt as to the cause of a shadow, the roentgen findings should be confirmed or disproved by a cystoscopic examination and if necessary, by means of pyelograms. A scratch on the wax-tipped ureteral stilet or catheter furnishes definite and reliable proof of the presence of a stone. Pyelograms, roentgenograms taken after the injection of a solution opaque to the roentgen rays into the ureter and pelvis of the kidney, are of great aid in clearing up doubtful cases of renal calculi. The size, shape, and position of the ureters, pelvis of the kidney and calices can be shown. One can, of course, rule out a calculus if the pyelogram shows that the shadow of a suspected stone is not in the course of the urinary tract. However, the fact that the suspected shadow and the shadow of the opaque solution are superimposed upon each other in a plain roentgenogram does not prove that it is cast by a stone. Either stereoscopic or lateral pyelograms are necessary to give this information. Pyelograms are of value in demonstrating a dilated ureter above a stone. Hydronephrotic sacs, which are frequently found in cases of renal calculi, can be shown by this method. Dangers of pyelography, in the hands of experienced urologists, are very slight. In 200 consecutive cases at the Urological Clinic of Johns Hopkins there were no bad results. There are today no dangers from poisoning or from over-distention of the ureters or pelvis of the kidney. Some authorities say that pyelography is contra-indicated if the urinary bladder contains infectious germs.

In a case of suspected renal stone the reader believes that after a good history has been taken and the urine examined the patient should have roentgenograms made of the entire urinary tract. Then, if there is any doubt as to the interpretation of a shadow of a suspected calculus, the patient should be cystoscoped and pyelographed to confirm or disprove the roentgen findings. The reader knows of nothing in medicine so unreliable as a kidney history. A case may have a negative urinary-

sis and negative roentgen findings and yet the kidney be the organ involved. Conditions other than calculi give symptoms of renal stone, such as hydronephrosis or obstructions of the ureter from other causes. If pyelography were used more extensively, the roentgenologist would not be blamed so often for not showing a stone when none exists.

A prolapsed kidney can be shown in a roentgenogram. With the usual position of the roentgen tube, the lower pole of the kidney shadow is at the level of the transverse process of the third lumbar vertebra. If the kidney shadow is seen in a different position, the kidney is displaced. Pyelograms are also very useful in demonstrating this condition. Only the outline of the kidney can be shown in a plain roentgenogram, whereas in a pyelogram the shadow of the pelvis filled with the opaque solution can be plainly seen.

Tuberculosis of the kidney is a comparatively frequent disease and is one of the first conditions to be suspected when a roentgen examination is negative for calculus. Renal tuberculosis gives roentgen findings when there is a calcification of the kidney tissues. Calcification, however, does not take place in the early stages of the disease. Roentgen diagnosis of renal tuberculosis can be made when the roentgenograms show calcified material scattered throughout the kidney shadow. The reader first made such a diagnosis from a roentgen examination in 1910. The patient had a large palpable abdominal tumor which the roentgenogram showed to be an enlarged kidney. Shadows of calcified material were seen in the lower pole of the kidney shadow. Operation confirmed the roentgen findings. Soon afterwards a second case was referred to the reader for Roentgen examination. Frequent micturition and macroscopic blood in the urine were the only clinical findings. The roentgenograms were negative for calculus but showed the shadows of calcified material in the right kidney. A diagnosis of tuberculosis of the right kidney was made and later confirmed by operation.

While plain roentgenograms may show an enlargement of the kidney shadow and displacement of the hepatic or splenic flexure of the barium-filled colon, they are of little value in the diagnosis of renal tumors. Pyelograms are of great aid in these cases by showing the encroachment of the renal tumor upon the pelvis

of the kidney. The value of pyelography is emphasized by the fact that the appendix has been removed in 45% of cases of right-sided hydronephrosis.

The welfare of the patient demands coöperation in diagnosis. The roentgenologist is the consultant of the attending physician. He makes observations and draws conclusions from roentgen examinations and gives these to the attending physician to use to produce efficiency in medicine.

CLOSURE OF SCHOOLS IN EPIDEMIC.

BY WILLIAM H. DEVINE, M.D., BOSTON.

Director of Medical Inspection, Boston Public Schools.

THE closure of schools is a moot question that has caused wide discussion.

For a proper understanding of the subject, a brief outline of the cause of spread of disease in school is essential.

The consensus of expert opinion is that direct contact is a potent factor in the transmission of contagious diseases in school: using the same books, pencils, etc., sharing sweets, contact in play, sneezing, coughing, etc.

The vitiated atmosphere of a badly ventilated, crowded car or room would be included in direct contact. The writer does not believe that the child exposed conveys the disease unless there is contact.

A prolific source of contagion is the pupil who attends school during the stage of incubation. Before the case is diagnosed, he may spread the germs to other members of the class.

The advantages claimed for closure of schools are:

(a) The elimination of contagious disease by direct contact in walking or riding in crowded cars, to and from school, and in the classroom;

(b) The improved health of children from outdoor recreation;

(c) The opportunity presented for fumigation of infected buildings.

The advantages of keeping schools open during epidemics are:

1. The daily assembling of pupils in classroom insures thorough inspection by medical inspection forces (doctors, nurses, teachers) and prompt detection of cases presenting signs or symptoms of communicable disease;

2. Many children temporarily removed from homes in which there may be more danger from infection by direct contact than there would be in attending or traveling to and from school;

3. Timely advice given in school on prevention of the disease;

4. Rigid school discipline tends to prevent contagion by direct contact;

5. Moral, mental, and physical welfare of children maintained in school;

6. Children not attending school are free to attend moving pictures and other public meeting places.

For the pupils of high and other schools obliged to travel by car, the danger of infection is increased by the vitiated atmosphere that obtains in certain conveyances.

It is conceded that the child from the model home, where every intelligent effort is observed for the prevention of disease, is somewhat safer than the child attending school.

A school without the advantages of medical inspection may be justified in closing during an epidemic. But even here the intelligent supervision of the teacher would aid in controlling the situation.

Under certain conditions, which rarely occur, the closing of schools is advisable.

This was apparent in the late epidemic of influenza. Two or three weeks after the visitation of this malady in Boston last fall, the city was in a demoralized condition. Thousands of pupils were absent from school, either from illness (many with influenza) or safeguarded at home. Over two hundred teachers were absent, some ill from the disease, some from fear, and others on account of illness or bereavement in their homes. Medical inspectors, overworked, were affected by the disease in the same proportion as other members of the community; perhaps twenty per cent. of the nurses in Boston were on the sick list, and thousands of families were afflicted by the disease and quite a few by death.

Owing to this condition of affairs and a panic stricken community, the director of medical inspection recommended the closure of schools. It is the first time in his experience as a school physician, or general practitioner, that he has seen the need of such action, and would pursue the same course in a similar emergency.

Under the conditions stated, the closure of schools would be justified even in a city with an efficient system of medical inspection.

It seems but logical that moving picture houses should be closed, at least to children, when it is considered necessary to close schools. The moving picture house, while it offers some advantages in educating people on the prevention of disease, certainly offers exceptional opportunities for its spread. The crowding of children awaiting admission, coughing, sneezing, applauding, and close contact of audience, all favor the transmission of disease.

To summarize: With proper medical supervision, such as obtains in the Boston schools, children are safer in school; the daily medical inspection and supervision of nurses and teachers are powerful preventive factors. Children remaining at home during epidemics do not have this systematic inspection and comparatively few have medical advice, with its early detection of contagious disease. The discipline of the school prevents the close proximity of the students and the alert teacher is quick to detect the early symptoms of disease.

The ordinary child is safer from contagion if attending school during an epidemic, incidentally losing no schooling.

Clinical Department.

FIVE CASES OF NEUROSYPHILIS ILLUSTRATING SPECIAL POINTS IN SYMPTOMATOLOGY AND COURSE.

By ABRAHAM MYERSON, M.D., BOSTON,

Assistant Professor of Neurology, Tufts College Medical School; Chief Medical Officer, Out-Patient Department, Psychopathic Hospital, Boston.

THE following five cases are reported because they represent somewhat unusual and yet rather important phases of neurosyphilis. The first case deserves attention because it points out the importance of the spinal puncture. It is very well known that the spinal fluid may be positive to the Wassermann test for syphilis where the blood is negative. But in this particular case, the blood remained negative during many examinations while the spinal fluid was constantly positive. The second case is noteworthy because the Brown-Séquard syndrome appeared in almost classic purity. Moreover, the spinal fluid showed the xanthochromia syndrome. The third case is one in

which a mental disease apart from the neurosyphilis manifested itself almost as if the neurosyphilis were not present while the neurosyphilis itself gave practically no symptoms. The fourth and fifth cases are important because they affect a brother and a sister. The brother, a paretic, clinically, was treated and had a fine remission of clinical symptoms, but the spinal fluid was unchanged. The sister, presenting none of the signs of paresis, was treated for a long time for orthopedic symptoms. She presented in her spinal fluid the syndrome of paresis. All together, these cases form a group which, though each is individual and unusual, is characteristic of neurosyphilis in the wide range of symptoms presented.

CASE 1. Taunton State Hospital, Out-Patient Department, No. 6. A white male, aged 40, married, with two healthy, living children. Wife well. One miscarriage, the second pregnancy. Patient was a confirmed alcoholic and rounder up until the time of his marriage, thirteen years before. Since then, occasional sprees. Six years before examination in October, 1906, he commenced to have stiffness of the legs with occasional twitchings. Vague paresthesiae, occasional sharp pains. The stiffness, paresthesiae, and pain came and went, as the patient put it, for about a year, and gradually the stiffness became more prominent. Stiffness became more marked until the patient was hardly able to walk. The pain disappeared, but now there was a continuous numbness in the legs. Difficulty with the bladder and bowels appeared. Some incontinence, but mainly difficulty in starting the stream and constipation. Sexual power disappeared at the end of two years. The arms became involved. He was formerly an expert wheelwright and mechanic. He became clumsy, easily fatigued, and then noticed a paralysis, especially of the hands. He was in the hands of several physicians, each of whom took his blood for examination, and on each occasion it was reported negative by the State Laboratory. His condition gradually grew worse, the muscles of the back became affected, and it was impossible for him to sit erect without bracing his back against the back of a chair. There was no difficulty in swallowing, no involvements of any of the functions associated with the head.

Physical Examination Summarized. A spastic paralysis of legs with double Babinski.

ankle clonus, very active knee jerks and almost complete loss of voluntary function. Moderate diffuse diminution of all modalities of sensation. Cremasteric and abdominal reflexes absent. Weakness of muscles of the back and weakness of all abdominal muscles likewise. No capacity for moving arms and shoulders. Slight power of flexion of wrists and elbows. Very little movement of fingers. Slight atrophy of the interossei. Diffuse sensory loss in upper extremities. Cranial nerves: There is slight difference in size of the pupils, the right being larger than the left, both irregular and reacting somewhat to light, better to distance. Aside from this, no cranial nerve involvement.

Blood negative to the Wassermann reaction for syphilis and negative on six other occasions tested during the treatment. Spinal fluid—excessive albumin (+++), globulin present ++, cell count 20—mainly small lymphocyte, one endothelial cell. Wassermann in spinal fluid ++. Diagnosis of syphilitic myelitis was made and treatment undertaken by the Swift Ellis method and by the intravenous as well. When the patient had received some thirty treatments, there was but slight progress made, but the disease seemed, on the whole, arrested; and at the end of a year and a half, when treatment was discontinued by the patient, there had been essentially no change. During all this time, as has been stated above, the Wassermann test in the blood remained negative, that is to say, no provocative Wassermann ever occurred. The spinal fluid Wassermann remained positive, *i. e.*, was not changed. This is rather unusual in a case so well treated and can be explained only by the statement that the pathological condition was but little influenced by the treatment.

CASE 2. The Brown-Séquard syndrome, as is well known, consists essentially of a spastic paralysis occurring on one side (corresponding to the side of the cord in which the lesion exists) and anesthesia of the other side of the body (corresponding to the non-involved side of the cord). Sachs, in his article on syphilis of the nervous system, barely mentions the syndrome as occurring with syphilis. Southard and Solomon, in the book on nervous syphilis, do not mention it at all. Nonne gives quite an extended account and says that syphilis of the spinal cord manifests itself very often under the form of unilateral lesion. Petran, in 1902, was able to collect thirty-four cases of

the spinal syphilis which presented the Brown-Séquard syndrome. However, he states that the unilateral lesion will not be presented in the purity in which we see it after injuries, hemorrhages, and in non-syphilitic tumors.

Case History. Patient seen in consultation with Dr. T. E. A. McCurdy. Is an unusually powerful negro of 42. A porter by occupation at the present time, and formerly a seaman. He denied syphilitic infection, though willingly admitting gonorrheal infection five years before. Six months previous to the time he was first seen, January, 1919, he commenced to complain of pain in the back, somewhere in the upper part of the lumbar curve. This pain was almost continuously consistent and increased gradually. It remained the only symptom, except for a slight difficulty in passing his water, occasionally priapism, and then diminution of sex power, for about two months, when a peculiar symptom manifested itself. He noticed that when he sat down on an iron seat, that the right side of his body would not feel the cold of the seat, whereas the left side did. Gradually this became more marked and he noticed, in addition, numbness of the right leg. This continued for about four weeks. For about a month before consultation, he noticed that he stumbled occasionally because of a clumsiness of the left leg. This did not concern him much because of its relative insignificance, until a week before consultation, when it became so marked that he found himself unable to control its movement and unable to walk.

Physical Examination Summarized. The upper part of the body, including the chest and arms, showed nothing of any importance. The left leg was spastic, presented greatly increased reflexes with moderate ankle clonus and suggestion of a Babinski sign. There was no loss of sensation whatever and the cremasteric and abdominal reflexes were present. On the other side, the right, there was no paralysis, almost complete loss of pain, touch, deep pressure, heat and cold discrimination up to finger's breadth above the umbilicus. The line of demarcation for pain and thermal sensibility was somewhat lower down than that of the touch and pressure sensibility, which latter corresponded to about the tenth dorsal segment. There was no definite zone of hyperesthesia, though this should be present in the classical Brown-Séquard paralysis. The skin reflexes were normal on this

side. The tendon reflexes were very active, but not as active as upon the other side. No Babinski sign. Blood not examined. Spinal fluid showed the following under pressure: tinged yellowish (xanthochromia) albumin +++, globulin ++, cells fifteen, mostly lymphocytes, gold showed 0001210000. (This particular gold sol was not as sensitive as it should have been). Wassermann in spinal fluid positive.

This syndrome the patient presented was classically a Brown-Séquard paralysis. The xanthochromia was so marked that before the Wassermann came back positive, the provisional diagnosis of tumor of the cord was made. K. I., however, was prescribed. With the positive Wassermann reaction, the patient was immediately put on very active treatment. He received ninety drops of saturated solution of potassium iodide, three doses a day, and was given $\frac{9}{10}$ grams of diarsenol. It was intended to put him on Swift Ellis treatment, but he responded so well to the first diarsenol injection and to the K. I., that it was determined to try this out first. The diarsenol was repeated every three days for eight doses and at present he is receiving one injection every two weeks. Later, after the diarsenol was started, mercury was given in the form of the salicylate intramuscularly. The clearing up was very prompt and gratifying. Almost immediately the pain disappeared, to the great joy of the patient. Then steadily and continuously both the sensory and motor disturbances receded. It is impossible to determine that any form of sensation recovered more rapidly than the others. The sensory disturbance disappeared from above downwards, that is to say, it seemed as if the upper lumbar segments first showed normal sensation, then the lower and the sacral. The skin reflexes returned after the third injection of diarsenol. Spasticity disappeared gradually until at the end of the third week of treatment the patient was using his leg in a manner approaching the normal, except when fatigued or in a hurry. The spinal fluid was re-examined on the third week. The Wassermann had become negative, the cells dropped to normal, there was a slight excess of albumin and a slight globulin. The gold sol was negative. No xanthochromia.

Of value in this case is, first, the occurrence of the Brown-Séquard syndrome with xanthochromia. The xanthochromia syndrome, on the whole, shows pressure with probably capil-

lary bleeding into the spinal fluid. The early occurrence of pain and the fact that the sensory functions were first disturbed, indicates that the disturbance proceeded inward from the meninges; second, the case illustrates a safe rule of procedure in the treatment of syphilis of the nervous system, which is, that before Swift Ellis or intraspinal is used, intravenous should be tried. If the intravenous proves unsuccessful, then the intraspinal method is indicated.

CASE 3. Taunton State Hospital Case No. 7. This patient presented an almost pure manic depressive psychosis with free intervals. At the same time, the physical signs, blood and spinal fluid indicated paresis. At no time, however, in free intervals, was there anything that indicated the paretic process. At first, it was very difficult to decide whether or not the mental symptoms related to the syphilitic infection. It is to be noted that the mental symptoms disappeared without treatment, that they followed the usual course of manic depressive insanity, and furthermore, that an uncle of the patient had been in the Taunton State Hospital with manic depressive insanity and that there is strong neurotic taint throughout the family.

Case History, in Brief. The patient, a man of 42, of distinguished American ancestry, himself a professor of Greek in a well-known Eastern University, entered the hospital from the Boston State Hospital. He had been under observation there and at the Psychopathic Hospital. He is single and had lost one leg in a railroad accident when he was 14 years of age. He acquired syphilis at the age of 21. He received three years of mixed treatment at the hands of competent men. The onset of his symptoms dates back to the spring of 1915, when at the closing of the teaching year, he noticed fatigue and a gradual oncoming depression. This depression became heightened into fear, when he noticed a rash on his body which he took to be syphilitic. He was assured that it was not and went abroad, as was his custom, to study a language in some European country. This year he selected Spain. On the trip, which he took with a professor of medicine from an Eastern university, the latter noticed the increasing melancholia of his companion and tried to get him to go home. He separated from his companion, became deeply depressed, and was finally steered home by friends. When

he reached home, the depression reached the point where he felt that all his body was poisoned with syphilis and he contemplated suicide. He became abstracted, that is, refused to eat or change his clothes, and was sent first, to the Homeopathic Hospital, and later to the Psychopathic. When he reached Taunton State Hospital, after a stay in the Boston State Hospital, he was deeply depressed, retarded, untidy, and had to be fed. The physical examination showed irregular pupils which reacted very little to light and the tendon reflexes were very active. No other disturbance noted. The Wassermanns in spinal fluid were positive. There was an increase of albumin and globulin and an increased cell count. Gold sol not done at that time. At the end of three months, he cleared up, went home, and started to teach again in another university. After teaching about six months, during which time he was only moderately efficient, he began to get restless, excited, talkative, and was sent back to the hospital. In the hospital he was obscene in a very witty fashion, told scandalous stories about nurses and doctors, talked incessantly of a philological research, was destructive and untidy and would have been exceedingly difficult to manage, were it not for the fact that he had one leg. Unfortunately, he fell out of bed and fractured his femur and this necessitated a plaster cast. After a long period of typical manic excitement, he recovered and is now at Taunton State Hospital acting as librarian, making indexes and catalogues. His memory shows no defect. He has an extraordinary stock of information on all manner of subjects, speaks practically all the languages of modern Europe, except the Slavonic, and is an authority on the History of Art. His physical signs have not changed in the least. The blood and spinal fluid, despite occasional periods of treatment, have remained unaltered.

This case presents the unusual coincidence of manic depressive insanity which seems to have been uninfluenced by the fact of a neurosyphilitic infection, and it also illustrates the long latency without definite symptomatology of neurosyphilis. Had this man been treated, it is quite possible that the recovery ("cure") "of his mental condition" would have been ascribed to the treatment.

CASE 4 AND CASE 5. *Case History, in Brief, of Brother.* J. P., 33 years of age, married, two children, no miscarriages or deaths. Was

first seen in December, 1917. For some three months he had shown decided mental failure, with irritability, forgetfulness, lowered capacity for his work, that of a sugar salesman, reckless and immoral conduct and increasing untidiness.

Physical Examination Unequal pupils, irregular with slow reaction to light. Tongue was tremulous, speech slurring with failure on the test phrases. The knee jerks and ankle jerks were very active, skin reflexes absent. Wassermann of the blood positive and Wassermann of the spinal fluid positive. Albumin +++, globulin +++, gold sol reaction 55555-43200, a typical parietic reaction. Cells 24, most of which were lymphocytes. A few plasma cells, occasional few endothelial cells. Diagnosis of paresis was unquestioned and he was put on diarsenol treatment. At the end of five or six injections, he commenced to show improvement, and at the end of the first ten was decidedly improved mentally, not nearly so forgetful or irritable, memory much better, and the untidiness had disappeared. He was given a vacation of two months, during which time he received mercury inunctions and K. I. At the end of that time, he was put on ten more treatments. This time he showed no speech defect though his enunciation was somewhat slow, memory was good, he was tidy, not irritable, was interested in the doings of the day, and given a responsible position in the State service in the Department of Forestry. The spinal fluid at the end of treatment showed practically no changes from the first recorded, that is to say, while there had been decided clinical improvement, there had been no change at all in the biological reactions.

When last heard from, which was nearly a year after his last treatment, he had been examined for the Army and passed as fit for service.

Sister's Case. A. P., 36 years of age, a nurse, who had been very solicitous concerning her brother, had consulted leading orthopedic physicians of Boston for some years concerning pain in her feet. These pains were ascribed to fallen arches and foot strain and she showed moderate degree of flat foot. There was also pain in the knee of a rather intense kind and often of a shooting, stabbing nature. She complained for some time of pains and aches throughout her body, of fatigue with moderate degree of sleeplessness. No mental

changes noted. She consulted Dr. Pratt, who, after taking the Wassermann and finding it positive, referred her to me with a question of neurosyphilis.

Physical Examination. Almost entirely negative, there being perhaps a slight change in the size of the pupils, which were very slightly irregular. The reflexes were active, but not more so than is found in many neurasthenics. Spinal puncture, Wassermann positive, albumin +++, globulin +++, cells 30, 18 lymphocytes, 4 plasma cells, and the rest endothelial and leukocytes. Gold sol reaction 555443320, a typical paretic reaction. She received ten treatments, during which time most of her pain vanished. She has not reported for treatment since.

In the brother's case the following points are noteworthy: One, the long remission following treatment and probably related to it; second, the non-correspondence between the clinical signs and the biological signs, that is to say, the absence of change in the biological signs, despite the fact that there had been great improvement clinically. As is well known, the reverse relationship retains, that is to say, "improvement in the biological signs with no improvement or even increase in symptoms clinically."

In the sister's case, the outstanding features are the latency of neurosyphilitic manifestations, no definite mental changes, no definite neurological changes noted, and yet the spinal fluid was strongly indicative of general paresis. This is the point that has been emphasized by many workers and captioned and especially described by Solomon.

Book Reviews.

Memoranda on Army General Hospital Administration. By VARIOUS AUTHORS. Edited by P. MITCHELL, M.D. New York: Paul B. Hoeber. 1918.

This book gives a clear and concise account of the administration of army general hospitals. The duties of the officers, clinical and administrative, are explained, and the importance of having a certain number of officers with special technical experience is emphasized. The problem of coordinating the civil and military medical demands, of utilizing technical experience, finding suitable officers for hospital formations, and of conserving the health and technical fitness of valuable medical men and women is considered. Various aspects of the

nursing service and hospital equipment, the administration of the surgical and sanitary divisions, and the clerical duties connected with hospital administration are described.

Surgical Applied Anatomy. By SIR FREDERICK TREVES, F.R.C.S. Seventh edition, revised by ARTHUR KEITH F.R.S., and W. COLLIN MACKENZIE, R.R.S.E. Philadelphia and New York: Lea and Febiger. 1917.

The appearance of the seventh edition of Sir Frederick Treves' book, "Surgical Applied Anatomy," gives evidence of its practical value. Although many additions and alterations have been made in this revision, the book still remains essentially the same as previous editions in spirit, form, and size. Recent surgical progress gained by experience in military service has made possible some modifications, especially in the field of "orthopedic anatomy," which deals with treatment of stiffened joints and disabled limbs. This volume includes twenty-seven new illustrations. As far as possible, the new anatomical nomenclature has been inserted in addition to the older system. Both students and practitioners will find this edition even more useful than the excellent volumes which have preceded it.

Medical Contributions to the Study of Evolution. By J. G. ADAMI, M.D., F.R.S., F.R.C.P. New York: The Macmillan Company. 1918.

"Medical Contributions to the Study of Evolution" is made up of a series of Croonian Lectures delivered before the Royal College of Physicians of London. It deals with the basic principles of the problem of evolution and is significant from both the biological and the medical point of view. The book is divided into four parts. The first deals with adaptation and disease, and considers the question whether variation is primarily inherent or acquired. It is pointed out that although many diseases which are now prevalent existed even in prehistoric times, there are some, such as syphilis, and, more modern, trench fever, which have originated through the process of adaptation. The fluctuations, mutations, and modifications exhibited by bacteria are considered. The author upholds the theory of the inheritance of acquired conditions.

Part II. deals with the problem of variability and adaptation, and strongly refutes Weismann's theory that the germ plasma is potentially eternal. The question of immunity is discussed. The latter part of the book considers the subject of the growth of tissues. The parasitic theory, the "cell rest" theory, and the theory of continuous tumor growth are discussed. This is a book of unusual interest both to those interested in a general way in the problem of evolution and to those concerned with its more scientific aspects.

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AMERICAN SURGEONS AT BRITISH MILITARY ORTHOPEDIC CENTERS.

A FITTING tribute has been paid to the work of the American orthopedists in a reprint by Lennox G. Teece, M.D., Ch.M., of Sydney, Australia, entitled, "The Organization and Surgery of Military Orthopedic Hospitals, with special reference to Nerve Surgery." This article, reprinted from the *Medical Journal of Australia*, September 7th and 14th, 1918, is a brief résumé of the observations made by Dr. Teece during 18 months of service on the surgical staff of the military orthopedic hospital at Shepherd's Bush in London. In speaking of the work of the Americans, he says in part:

"It is interesting to note that the Americans, with praiseworthy enthusiasm and astuteness, recognized the importance that orthopedics would play in military surgery immediately on their entry into the war, and before a single American soldier landed in France, one hundred American orthopedic surgeons were enlisted in the United States Medical Corps, sent

to England, and there distributed amongst the British orthopedic centres with a view to their gaining experience in the military side of orthopedic surgery. . . . In France the Americans have already evolved the excellent scheme of a rest camp for men partially and temporarily disabled by affections such as flat feet, hammer toes, sprains of joints, etc., and the medical control of this camp is vested in an orthopedic surgeon, whose duty it is to render these men again fit for active service as early as possible. . . . This prevision on the part of America for the future welfare of her disabled men, taken when she had scarcely yet fired a shot, stands out in striking contrast to the policy of procrastination of the Commonwealth Government, which has allowed nearly four precious years to pass by, and is only now about to make an attempt to organize the treatment of these cases."

The problem of the returned soldier in every country is now of immediate importance, and according to Dr. Teece's article, the problem is presenting itself to Australia in an accentuated form. In Australia, a country of scattered population, orthopedic centers have not yet been established in numbers large enough to permit of extensive treatment to the individual. Since many cases require simply observation on their return to civil life, it falls upon the general practitioner to assume this duty. Orthopedics has become a subject of such vast possibilities during the recent war that it is almost impossible to tell all the benefits which are derived by the disabled soldier, sailor, or marine from this branch of surgery; but Dr. Teece has outlined as briefly as possible the growth of the work in Great Britain and Ireland.

With a word concerning the work of the late Owen Thomas, inventor of the famous Thomas splint, he goes on further to describe the building up of that work by Thomas' nephew, Sir Robert Jones. On his appointment as Inspector of Military Orthopedics, Sir Robert Jones organized military orthopedic centres in Great Britain and Ireland, aided by the Red Cross and private benefactors. There are nine of these centres in England, three in Scotland, and two in Ireland. Shepherd's Bush Hospital is an example of the other centres throughout the British Isles.

An orthopedic hospital differs from an ordinary military hospital in that there is no rapid passing through of cases, and that so many of the patients, as far as military duty is concerned, may never again be called upon for service. Under these conditions special de-

mands must be met with regard to use of a man's time. Shops for the manufacture of all kinds of apparatus are connected with the hospital. Each individual shop is in charge of a competent man and gardening and cleaning as well are done by the patients who are able. Much of the work given to the patients is of a curative type best suited to the individual needs. A gymnasium was built and equipped at the expense of the ex-King Manuel. There are massage and electric departments, an extensive hydro-therapeutic department and a plaster department. The whole impression of this orthopedic hospital, as well as of all the other centres, is one of an active, bustling, wide-awake, productive, and useful community. Among 1200 men, nearly all of them seriously maimed, there is cheer and courage, and of a surprising degree.

The types of cases divide themselves into three groups: (1) the recently wounded, (2) those whose wounds are healed and who require treatment for the disability resulting from that wound, (3) those with deformities and disabilities not the result of wounds.

In the field of nerve surgery the number of cases which occur is large and the conclusions drawn are notably unanimous. Every man suspected of nerve lesion receives a thorough neurological test and the report of his case is filed for reference. The results of nerve surgery as obtained in Shepherd's Bush Hospital are covered very fully by Dr. Teece and treatment is carefully described. Generally speaking, it was found that the results are promising, though on account of greater trauma and almost universal sepsis, recovery among military patients is slower than that of civil life. It is estimated that only 12.9% of nerve sutures and nerve grafts are failures.

Thus the work of these English orthopedic centres is one more proof of the far-reaching importance of a branch of surgery which not a few years ago was chiefly associated with the care of little children and cripples.

RED CROSS HEALTH MISSION TO ITALY.

UNDER the supervision of Col. Robert Perkins, Red Cross Commissioner for Italy, the War Council of the American Red Cross last fall sent a unit of 60 persons to the Italian

Government to conduct a health campaign, the principal object of which shall be the stamping out of tuberculosis. Numbered among the members of this mission are many of the best known tuberculosis specialists in this country. Dr. William Charles White of Pittsburg is director of the unit, and others are: Dr. John H. Lowman of Western Reserve University, Cleveland; Dr. Louis I. Dublin of the Metropolitan Life Insurance Company, New York; Dr. Richard A. Bolt of the Health Department of the City of Cleveland; Dr. E. A. Paterson of Cleveland; Dr. R. G. Paterson of Columbus, Ohio; Miss Mary S. Gardner, head of the Bureau of Public Health Nursing of the American Red Cross, and Lewis D. Bement of Framingham, Massachusetts, who is the executive manager of the organization. The work will be divided as follows: Medical Division; Division of Medical Statistics; Child Welfare Division; Division of Medical Inspection of Public Schools; Division of Education and Organization; Division of Public Health Nursing, each division to be directed by one of the above named personnel.

In sending this health mission to Italy it is not to be inferred that it is done because Italy is backward regarding these matters. Dr. White, who was Director of the Red Cross tuberculosis unit in France for 10 months, gives us the following statement in a recent number of *Science* concerning the situation in Italy:

"The city of Genoa, for many years, probably over 20, has had a museum showing the various phases of tuberculosis, as well as modern methods of combating them. . . . Attached to the museum are a dispensary and visiting nurses' school, not surpassed by any of the American cities.

"In Genoa also is an attractive open-air school . . . where provision is made for 200 or 300 Genoese children of the more unfortunate classes. They arrive in the morning, get their midday meal and morning luncheon, and are sent to their homes in the evening. Play is supervised by special teachers, bathing facilities arranged for; the children take singing lessons, and a healthier, happier looking lot of children one could scarcely find There is also a children's hospital in the mountains. In Rome the *Giornale d'Italia* raised money by popular subscription and built a beautiful hospital on one of the hills for children with bone tuberculosis.

"The American Red Cross had the privilege of giving \$25,000 to this hospital.

"But Italy's great spirit for progression was arrested with the declaration of war, which compelled the mobilization of all her resources for the one big task in hand. It naturally followed that her civilian population had to wait until the military needs were cared for

"When Italy saw the help we were extending to France, she invited the United States to come to her shores with such assistance as we could offer."

Much interest is evidenced in the success of this health mission; and its effect, it is anticipated, will be far-reaching.

REEDUCATION OF DISABLED SOLDIERS AND SAILORS.

THE Government is endeavoring to do everything possible to restore the disabled soldier and sailor to health, strength, and self-supporting activity. Upon his discharge, if an artificial limb or other orthopedic or mechanical appliance is needed, the Bureau of War-Risk Insurance supplies it without cost and renews it when necessary. Any man whose disability entitles him to compensation under the War-Risk Insurance Act, may be provided by the Federal Board with a course of vocational training for a new occupation. Although this course is optional, the Government strongly recommends each man who needs it, to undertake this training. If his disability prevents him from returning to employment without training, the course will be furnished free of cost and he will be paid, as long as the training lasts, a monthly compensation of not less than sixty-five dollars a month, exclusive of the sum paid dependents, or less than one hundred and seventy-five dollars a month inclusive of the sum paid dependents if they are living with him. If his disability does not prevent him from returning to employment without training, the course will be free and compensation will be allowed him, but not his dependents. In either case, the family of each disabled man will continue to receive from the Government during his period of training the same monthly allotment as that paid prior to his discharge from the Army or the Navy. If the disability continues after his course has been completed, he will continue to receive compensation. Upon the completion of his training, the Federal Board, through its

Employment Service, will assist him to secure a position.

All disabled soldiers should address their communications either to the Federal Board for Vocational Education, Washington, D. C., or to the district office of the Federal Board of the district in which he is located. The office of District No. 1, which includes Maine, New Hampshire, Vermont, Massachusetts, and Rhode Island, is located at Room 433 Tremont Building, Boston, Mass. The office of District 2, including Connecticut, is at Room 711, 280 Broadway, New York.

OSWALDO CRUZ' CAMPAIGN AGAINST YELLOW FEVER.

"GIVE me the proper authority and a sufficient force and means to work with, and I will rid Rio of yellow fever in three years." This was the confidential assertion of a young Brazilian, Oswaldo Cruz, who was, in 1900, engaged in bacteriological and toxicological research at the Pasteur Institute. Rio was the native city of this young man and thus his enthusiasm toward stamping out the plague had an added force. For sixty years, since 1849, yellow fever had held a heavy hand over the port and it was often told among men who followed the sea that "to go to Rio is to commit suicide." A total of 59,000 deaths had been exacted during these years, in the city proper. In 1910, when a serious outbreak of yellow fever occurred in Rio, Prof. Roux selected Oswaldo Cruz to direct a campaign against the dread disease. Inspired by the success of the American Yellow Fever Commission in Cuba, Cruz, in 1903, with 75 medical men, started on his mission to exterminate the mosquito, *Stegomyia fasciata*, which carries the disease to man. Drastic measures for extermination were immediately outlined and put into execution by Cruz and his colleagues. Compulsory notification of the disease was required. In 1903 there were 584 fatal cases in Rio and in 1908 it was completely eradicated. In 1908 Cruz resigned the post of Director-General of Public Health to accept a position as head of the Institute of Tropical Diseases. But on Feb. 11, 1917, a comparatively few years after the completion of a campaign which embraced nearly the whole of Brazil in its far-reaching

success, Oswaldo Cruz passed away in his forty-fifth year, a most successful worker in the field of preventive medicine. The institution in which he served from 1908 on, is now known as the Oswaldo Cruz Institute for Experimental Pathology and Serum Therapeutics.

SUFFOLK DISTRICT CENSORS' MEETING.

ATTENTION of physicians resident in Suffolk County but not yet members of the Massachusetts Medical Society, is called to the Censors' meeting announced on the last page of this issue of the JOURNAL. This notice was previously published for the date of May 8. Attention is particularly directed to the change of date from May 8 to May 1, as announced in last week's issue. All candidates should make personal application to the Secretary, and present their medical diploma at least a fortnight before the examination.

MEDICAL NOTES.

"PTOMAIN" POISONING.—The following extract from a recent issue of the *Bulletin* of the Chicago School of Sanitary Instruction presents the views of this institution on the subject of "ptomain" poisoning.

"The term 'ptomain' poisoning has become a cloak for ignorance. Any acute gastro-intestinal attack resulting from a great variety of causes is apt to be called 'ptomain' poisoning. From the time of Selmi, when ptomains were regarded as animal alkaloids, our conception of these substances has changed markedly.

"Rosenau and his associates at Harvard have been searching in vain for the past year and a half for ptomains that might cause gastro-intestinal or other symptoms. Split products of protein putrefaction are readily isolated. Some of these products have physiologic activity, but none of them thus far has been demonstrated to be poisonous when taken by the mouth.

"Chemists are now seldom confident of the purity of protein fractions, even when obtained in crystalline form. The chemical search for split protein products as the cause of 'ptomain' poisoning has practically been abandoned. Most of these split products are amines, which are either not poisonous at all, or no more so than their corresponding salts.

"The chemical resemblance between muscarin

and cholin has directed the work toward the phosphatids, but thus far this line of research has not helped solve the puzzle of 'ptomain' poisoning. Chemists avoid the use of the word ptomains, for the reason that it lacks precision. "Ptomain is a term for chemical substances of uncertain origin, unknown nature, and doubtful existence."

EPIDEMIC INFLUENZA IN GREECE.—A report from the American consul general at Athens, Greece, published in a recent Public Health Report, describes the epidemic of influenza in that city last fall.

"The first appearance of influenza in Greece occurred last summer, toward the end of May; the symptoms were but slight and the people who were attacked suffered for three or four days with fever, accompanied by nervous symptoms. It was called at the time 'Spanish fever,' from the country where it first made its appearance.

"Since the month of September the epidemic became worse and caused a considerable rise in the mortality. Many cases complicated with broncho-pneumonia appeared then all over the country, and of these cases perhaps 50 per cent. were fatal. The most ordinary cases appeared with a general cyanosis, which spread the rumor of the existence of plague and cholera. The people were alarmed and the sanitary authorities were constrained to go carefully into the matter and issue instructions as to the nature of the disease and the necessary steps to be taken to avoid contamination and complications. Among these measures were the closing of schools, both private and public, and of nocturnal theatres and cinemas. People were then instructed to avoid the overcrowded places and trams and to retire to bed with first symptoms of malaise; they were further informed that coughing and sneezing were the means of spreading the disease from person to person. Owing to these prophylactic measures, or rather to the lapse of time, the disease began to decrease toward the middle of December, or rather began to lose its severe and fatal form.

"The ages that suffered most and had most of the fatal cases were between 20 and 45. The symptomatic treatment has generally been followed here. In the beginning of the disease most of the doctors tried the injection of corrosive sublimate in solution, but very soon it was abandoned, owing to rather bad effects. The colloidal metals either prepared locally as colloidal silver or as electrargol by subcutaneous or intravenous injections, if there are no complications, have also been tried, and it would appear that this treatment gives very good results. Vaccine treatment was not tried here at all."

The total number of deaths from influenza and pneumonia in Athens and Piræus during

the mouths of September, October, November, and December, amounted to one thousand and nineteen.

INFLUENZA IN THE PAST.—It is of interest to observe in the records of the past the former appearance of a disease which is prevalent in epidemic form at the present time. An article in the *British Medical Journal* gives us a glimpse into the past history of influenza.

“The disease now so well known as influenza was familiar to physicians from remote antiquity as a catarrhal pestilential fever. Among the people in different epidemics it went by various names, most of them indicative of novelty. Thus, in this country it was known in 1556 as the ‘new burning ague,’ in 1562 as the ‘new disease,’ the ‘new ague,’ and—with a touch of irony—the ‘new delight’ and the ‘gentle conviction.’ In France it was called *grippe* from the suddenness of its onset (*a gripper*, to seize), *coquette* and *coqueluche* from the capriciousness of its manifestations, while the universality of its diffusion was designated as *la générale*. For the same reason the Germans called it *Modelfieber*, and from the suddenness of attack *Blitzkatarrh* (lightning cold). Interesting descriptions are given by keene-sighted non-professional witnesses. In 1562 Mary Queen of Scots fell a victim to the prevailing epidemic. Randolph, Elizabeth’s ambassador, writes to Cecil from Edinburgh in November: ‘Maye it please your Honer immediately upon the Queen’s arrival here, she fell acqaynted with a new disease that is common in this towne, called here the newe acqayntance, which passes also throughe her whole Courte, neither sparing lords, ladies, nor damoyssells, not so much as either Frenche or English. It ys a plague in their heades that have it and a soreness in their stomackes, with a great conge, that remayneth with some longer, with others shorter tyme, as yt findeth after bodies for the nature of the disease. The quene kept her bed six days. There was no appearance of danger, nor manie that die of the disease, excepte some olde folkes. My lord of Murray is now presently in it, the lord of Lidingetone hathe it, and I am ashamed to say that I have byne free of it, seeing that it seketh acqayntance at all man’s handes.’ Nearly three centuries later we have an account by Thomas Carlyle in a letter written in January, 1837, to his young sister, Mrs. Hanning, then living at Manchester: ‘All people have got a thing they call Influenza, a dirty, feverish kind of cold; very miserable and so general as was hardly ever seen. Printing offices, Manufactories, Tailor shops and such like are struck silent, every second man lying *snifering* in his respective place of abode. The same seems to be the rule in the North too. I suppose the miserable temperate climate may

be the cause. Worse weather never fell from the lift, to my judgment, than we have here. Reek, mist, cold, wet; the day before yesterday there was one of our completest London fogs—a thing of which I suppose you even at Manchester can form no kind of notion.’ Among the innumerable theories as to the cause of the disease, that of the Scottish writer, Patrick Walker, deserves mention. In his life of Alexander Peden, the famous Covenanting leader, speaking of the epidemic of 1712, he attributes the ‘new burning ague’ to ‘the effects and evidences of God’s displeasure appearing more and more against us since the incorporating unions, mingling ourselves with the people of these abominations, making ourselves liable to the judgments, of which we are deeply shaming.’ The ‘people of the abominations’ were the English, the incorporating union was the Union of the Crowns in 1707.”

THE GRANDE CHARTREUSE AS A BASE HOSPITAL.—At the beginning of the present year, the buildings of the Grande Chartreuse, which have been empty since the sequestration of the monastery in 1903, were handed over to the United States for use as a base hospital. A recent issue of the *British Medical Journal* describes the buildings.

The monastery was originally founded by St. Bruno in 1085, and in the succeeding six centuries was eight times destroyed by fire. The present buildings have no architectural pretensions, and date from 1676; they stand in a picturesque situation at an elevation of over 3,000 feet, on the northern slopes of the Dauphiné Alps, about twenty miles from Grenoble. Since the buildings were taken over by No. 3 Mount Sinai Unit, which left America in February, they have undergone various transformations and a number of new structures have been erected. A dispensary has been established in the pharmacy of the monks, and laboratory and x-ray outfits have been provided. There are two operating theatres, and separate rooms for eye, nose, and throat work, jaw surgery, and dentistry. The ward buildings, which vary in size, the largest providing 115 beds, are lighted by electricity and warmed with steam heating. Covered walks for convalescents have been provided, and will no doubt be needed, as the winter climate is rigorous. The Mount Sinai unit consists of twenty-six officers, among them being some of the leading physicians and surgeons of New York, sixty-five nurses, five female civilians, and 153 enlisted men. The first patients were admitted in May.

HONOR FOR DR. F. W. MOTT.—Dr. F. W. Mott has been awarded the Moxon medal of the Royal College of Physicians of London.

PARIS MEDICAL FACULTY.—The Paris Medical Faculty has proposed reforms and extensions in the scope and methods of its teaching work. A recent issue of *Science* has reported that for the teaching of pathology, cinematographic apparatus will be installed in the lecture theatres and collections of films are to be made. One of the two chairs of internal pathology is to be transformed into a clinic of infectious diseases. The practical curriculum is to be completed and supplemented by a large scheme of free clinical teaching in which all the members of hospital staffs who wish to do so will take part. With the object of ensuring almost full autonomy to the services of the faculty by securing the most favorable organization for the treatment of patients and the instruction of students, a commission of studies has been set up which includes representatives of the Ministries of Public Instruction and of the Interior, the Prefecture of the Seine, the Municipal Council, the University, the Faculty, and the medical staffs of the hospitals. Arrangements will be made for the purpose of attracting to Paris men of science, doctors, and students from foreign countries. The government has favorably received a request that it should provide funds for the improvement of existing services and for the creation of others, particularly an institute of medical biology. Internal improvements have been made in the library and museums of the faculty. A special committee has been engaged in elaborating the statutes of a society of friends of the Paris Medical faculty.

SANITARY CONGRESS OF AVIATION.—On February 15, in the Great Hall of the University of Rome, there was opened an inter-allied sanitary congress of aviation, for the purpose of establishing international standards for testing the aptitude of candidates for air service; the criteria of fitness of the flying personnel in the air; the best means for the protection of air-men against great barometric depressions and cold at high altitudes; and hygienic rules for future civilian aviation, and related subjects.

DEATHS FROM INFLUENZA.—A recent health report indicates that during the month of March deaths from influenza have declined throughout the country. For each of the four weeks ending March 29, the number of deaths were respectively 946, 932, 737, and 655.

RED CROSS CONFERENCE AT CANNES.—The first interallied Red Cross Conference opened on April 1 at Cannes, France, with an address by Henry P. Davison, chairman of the American Red Cross Council. The following Americans attended the meeting: Henry Morgenthau, Lieut.-Col. Lindsay R. Williams, U.S.A.; Dr. E. R. Baldwin of New York, Dr. Wycliffe Rose, director-general of the International Health Board of the Rockefeller Foundation; Dr. L. E. Holt, College of Physicians and Surgeons; Dr. Livingston Farrand, formerly president of the University of Colorado; Col. Richard P. Strong of Harvard University, and Col. F. R. Russell, representing the War Department.

The Conference will continue for two weeks, and means of combating tuberculosis and other diseases, and measures for promoting public health will be discussed.

RETURN OF DR. DUBOIS.—Dr. Eoline C. Dubois of Springfield has recently returned from a year's service in France.

AMERICAN PEDIATRIC SOCIETY.—The American Pediatric Society will hold its thirty-first annual meeting at the Chalfonte Hotel, Atlantic City, New Jersey, on June 16, 17, and 18, 1919. The following addresses will be delivered:

1. President's Address.
Edwin E. Graham, M.D., Philadelphia.
2. The Chemistry of Human Milk.
Fritz B. Talbot, M.D., Boston, and W. Dennis, M.D.
3. Certain Nutritional Disorders in Infants Associated with a Proteolytic Intestinal Flora.
Langley Porter, M.D., San Francisco.
4. The Pathogenesis of Certain Nutritional Disorders.
W. McKim Marriott, M.D., St. Louis, and J. F. Perkins, M.D.
5. Precipitin Reactions in Infant Stools.
Clifford G. Gruzee, M.D., Chicago.
6. Relation of Convulsions in Infancy and Early Childhood to Epilepsy in Later Life.
J. Lovett Morse, M.D., Boston.
7. Certain Aspects of Cutaneous Hypersensitiveness.
E. C. Fleischer, M.D., San Francisco.
8. Quarantine and Disinfection in Scarlet Fever.
J. Claxton Gittings, M.D., Philadelphia.
9. A Study of the Cholesterol Metabolism in Infants.
K. D. Blackfan, M.D., Baltimore, and J. L. Gamble, M.D.
10. The Energy Metabolism of Children from Birth to Puberty.
Fritz B. Talbot, M.D., Boston.
11. Some Details in the Management of a Premature Baby.
Isaac A. Abt, M.D., Chicago.
12. Polioencephalitis following Influenza during the Recent Epidemic.
Henry Heiman, M.D., New York.

13. The Cause of a "Sporadic" Case of Cerebrospinal Meningitis.
Henry L. K. Shaw, M.D., Albany.
14. The Tertiary Cerebral Manifestations of Hereditary Syphilis.
Alfred Hand, Jr., M.D., Philadelphia.
15. Cerebrospinal Involvement in Hereditary Syphilis.
P. C. Johns, M.D., St. Louis.
16. A Health Study of School Children.
Richard M. Smith, M.D., Boston.
17. The Predominance of Seborrheic Eczema in Early Life.
Thomas S. Southworth, M.D., New York.
18. A Case of Aneurysm of the Ascending Arch of the Aorta in a Boy of Thirteen Years.
Henry Heiman, M.D., New York.
19. Two Cases of Pyelitis and a Case of Suppression of Urine for Four Days.
Rowl and G. Freeman, M.D., New York.
20. An Interesting Lung Case with Exhibition of X-Ray Plate.
John Rudth, M.D., Baltimore.
21. A Case of Hodgkin's Disease in a Girl of Two Years.
Langley Porter, M.D., San Francisco.
22. A Case of Calculus and a Case of Scorbutic Hematuria.
Percival J. Eaton, M.D., Pittsburgh.
23. A Case Report.
D. Murray Cowie, M.D., Ann Arbor.
24. Elephantiasis of the Middle Finger.
Henry F. Helmholz, M.D., Evanston.
25. A Few Roentgenograms Demonstrating Gastro-Intestinal Abnormalities.
Charles Gilmore Kerley, M.D., New York.
26. Stenosis of the Pylorus in an Eleven Year Old Boy.
Howard Childs Carpenter, M.D., Philadelphia.
27. Business Meeting (For members only). Report of Council.
28. Child Welfare Work in the War Zone.
Maynard Ladd, M.D., Boston.
29. The Incidence and Significance of the Rheumatic Nodules in Children.
Joseph Brennemann, M.D., Chicago.
30. The Prevention of the Spread of Measles.
Charles Herrman, M.D., New York.
31. Congenital Atelectasis of the Lungs.
Charles Hunter Dunn, M.D., Boston.
32. Osteogenesis Imperfecta.
H. M. McClanahan, M.D., Omaha.
33. Care and Treatment of Whooping-Cough Patients.
J. E. Winters, M.D., New York.
34. Otitis Media in Children.
Walter Lester Carr, M.D., New York.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending April 12, 1919, the number of deaths reported was 292 against 268 last year, with a rate of 19.12 against 17.82 last year. There were 50 deaths under one year of age against 41 last year.

The number of cases of principal reportable diseases were: Diphtheria, 33; whooping cough, 9; scarlet fever, 71; typhoid fever, 5; measles, 8; tuberculosis, 53. Included in the above were the following cases of non-residents: Diphtheria, 3; scarlet fever, 11; typhoid fever, 1; tuberculosis, 3.

Total deaths from these diseases were: Diphtheria, 1; scarlet fever, 2; tuberculosis, 27. Included in the above were the following non-residents: Tuberculosis, 2.

Influenza cases, 54; influenza deaths, 9.

SPRINGFIELD ACADEMY OF MEDICINE.—The Annual Meeting of the Springfield Academy of Medicine was held in Springfield on Tuesday, April 8, 1919. The annual reports were read and officers were elected for the year 1919-1920. An address, "Influenza in France," was delivered by Major Roger Kinnicut, Base Hospital No. 6.

MASSACHUSETTS STATE DEPARTMENT OF HEALTH.—The Massachusetts State Department of Health wishes to announce the following changes and appointments:

A Sub-division of Public Health Nursing has been created within the Division of Hygiene. This will include the Health Instructor Nurses of the Division of Hygiene. Miss Blanche Wildes, one of the present Health Instructors, has been appointed Chief of this Sub-division.

Dr. Edwin N. Kent of Boston has been appointed Supervisor of Mouth Hygiene in the Division of Hygiene. Dr. Kent is now President of the Dental Hygiene Council of Massachusetts. His work for the present will have to do with the preparation of educational material on mouth hygiene, and gathering and correlating information regarding dental dispensaries in the State.

Miss Bernice W. Billings, for the past year Chief of the Sub-division of Tuberculosis in the Division of Communicable Diseases, has resigned to accept a position as Executive Secretary of the Oneida County Tuberculosis Committee, New York.

Dr. William W. Walcott of Natick, Captain and Assistant Surgeon, U. S. Medical Corps, serving with the 101st U. S. Engineers, died in France on March 16, 1919.

Dr. Walcott had been with the Massachusetts State Department of Health since 1907, first as State Inspector of Health, and later as District Health Officer. He obtained leave of absence from the Department in September, 1916, to enter the Army service.

TUBERCULOSIS FINDINGS IN FRAMINGHAM.—The tuberculosis findings resulting from the work done by the Framingham Community Health and Tuberculosis Demonstration are re-

ported in *Framingham Monograph No. 5*. In the course of this campaign, there has been no unusual invasion into or exodus from the community as a result of the Demonstration. The total number of cases under care since the beginning of the work to the present time is 242, which, with suspicious cases, 69, gives a total of 311. While only 27 cases were under care on January 1, 1917, this number was increased on November 15, 1918, to 181 cases. During 1916, there were 40 cases under observation or treatment, a number representative of past conditions in Framingham; during 1917, this number increased to 185. The significance of this work may be indicated by the fact that during the decade 1907 to 1916, the number of cases reported annually averaged 14. In 1917, this number jumped to 59. Of the deaths occurring to date, 45 per cent. were in out-of-town institutions.

Of the total number of cases now under care, 12 per cent. are receiving treatment out of town. Of the number of cases now under care, 37 per cent. are active. The Framingham experience would indicate a need for two institutional beds for every death. The total number of active cases under observation or treatment since the beginning of the Demonstration is 136, or 56 per cent. of all the cases observed. It is believed that nearly all of the active cases in the community have come under observation or treatment. During the past, known cases to deaths in Framingham have averaged 3 to 1; in 1917, the number was 11 to 1, including arrested cases. On a basis of the medical examination drives, it is indicated that the total number of cases (including arrested cases) to deaths is 21 to 1, whereas the total number of active cases to deaths is 9 to 1. If it is assumed that Framingham should have a death rate similar to the Registration Area, the ratio of total cases to deaths would be 15 to 1 and of active cases 7 to 1. Of those examined, 2.15 per cent. were tuberculous.

During the preceding decade, the tuberculous death rate was 99.6 per 100,000. For 1917 it was 99 per 100,000. For 1918 the indications are that the rate will be approximately 74 per 100,000. Only three of the total number of deaths occurring in Framingham during the Demonstration period were non-residents. Fifty-five per cent. of the deaths were between 16 and 45 years of age. The outstanding fact in regard to occupations is that 33

per cent. were recorded as "housewives" or engaged in housework.

The consultation service has demonstrated itself to be a very superior instrument for the discovery of tuberculosis cases, particularly of the active type, and is a logical adjunct to the ordinary dispensary activity. It also serves materially to interest and instruct the physicians, stimulates the discovery of early cases, and increases reporting. The known cases are widely distributed among the local physicians as to medical care, most of the physicians being in touch with the Health Station regarding the handling of one or more cases. Further, practically all of the physicians employ the consultation service of the Health Station. Framingham is a typical industrial American community, and, on a basis of past mortality and morbidity records, is affected with, if anything, less tuberculosis than would be representative of the Registration Area as a whole. On the other hand, the disease exists to a much greater degree than has hitherto been supposed, and can be discovered and brought under control if an intensive search is made for it.

The application of the Framingham findings to the United States as a whole would indicate that there are about one million active cases in the country at large and something over two million active and arrested cases. These figures are certainly minimum estimates, in view of the excessive amount of tuberculosis prevalent in the colored population of the Southern States.

The Massachusetts Medical Society.

The next annual meeting will be held at the Copley-Plaza Hotel, Boston, June 3 and 4, 1919.

The following letter has been sent to the members of the State Committee of the Medical Section, Council of National Defense:

TERMINATION OF WAR ACTIVITIES. MEDICAL SECTION, COUNCIL OF NATIONAL DEFENSE.

UPON the signing of the armistice on November 11, 1918, the strenuous war time activities of the committees of the Medical Section of the Council of National Defense automatically ceased. As the unfinished business in the hands

of the committees at that time is now approaching completion, you are hereby notified of the termination of your war duties as a State Committeeman on April 1, 1919.

Not until the history of our part in the great war is written will the people realize the important rôle the medical profession of the United States played in making our country a deciding factor in winning the war. Do you realize that in the year before our entry into the conflict the commissioned officers in the Medical Departments of the Army and the Navy numbered less than five hundred in each service and that practically 40,000 civilian doctors had been added to these two Corps by the time hostilities had ceased? When the story is told of the enrollment of these thousands of doctors, it must give the largest credit to our many State and county committees who labored so patriotically and continuously to carry out the recommendations of the organization under which they worked, the Council of National Defense, and thus aided the administrative departments of the Surgeons General of the Army, the Navy, and the Public Health Service and the Provost Marshal General.

The work of these committees under the direction of the General Medical Board had to do with activities of which the following is a brief summary: Recruiting medical officers; standardization of medical and surgical supplies; coöperation in controlling venereal diseases; mobilizing five thousand dental surgeons; establishing committees on hygiene, sanitation, general surgery, orthopedic surgery, ophthalmology, otology, rhinology, and laryngology, general medicine, nursing, women physicians and medical schools, organizing medical advisory boards; the study of industrial medicine; securing through legislation increased rank for reserve medical officers; and finally, individual classification of the members of the profession through the medium of the Volunteer Medical Service Corps.

I want you to know that those of us who have had the responsibility of organizing and enrolling the medical profession and resources appreciate the value of your work and thank you for it from the bottom of our hearts. This includes the Secretary of War, who presides over the Council of National Defense, the Secretary of the Navy, who is one of its members, and the President of the United States, who appointed the Council and on two

occasions has said, in speaking of our state and county committees: "Will you not be kind enough to convey to them a message of sincere appreciation from me of their services as authorized governmental agencies? . . . The health of the Army and Navy and the health of the country at large is due to the coöperation which the public authorities have had from the medical profession."

Finally, in sending this communication to you after our two years of stressing work together, I want to thank you personally for your ever prompt response to my calls for help and for the evidence you have always shown me of your loyalty, fidelity, and friendship.

Yours very truly,

FRANKLIN MARTIN,
*Chairman General Medical Board,
Council National Defense.*

Obit variis.

FRANCIS JOSEPH GIBLIN, M.D.

DR. FRANCIS JOSEPH GIBLIN died at his home in Dorchester, April 13, 1919, aged 52 years. Dr. Giblin entered the Harvard Dental School in 1886, transferred to the Medical School the following year and took his M.D. in 1893. He was a house officer at the Carney Hospital in South Boston and afterwards served for two years in Coomb's Hospital, Dublin, Ire. Later he settled in Dorchester, there serving on the visiting staff of St. Mary's Infant Asylum, becoming in time president of the staff.

He is survived by his widow and one child. He was a Fellow of the Massachusetts Medical Society.

CLARKE S. GOULD, M.D.

DR. CLARKE S. GOULD died on March 28, at the Peter Bent Brigham Hospital, Boston, after an illness of two weeks. Dr. Gould was born on August 2, 1864, in South Boston, the son of Dr. Joseph F. Gould, who was surgeon of the 4th Massachusetts Volunteers in the Civil War. He received his medical degree from Harvard Medical School in 1887, and began practice in Maynard. In 1889, he began practising in Norwood. In 1915 he entered the service of the State Board of Charities. Two years later he

was commissioned lieutenant in the Medical Corps of the United States Army, and went to Fort Benjamin Harrison, Indiana, for training. He was promoted to the rank of captain, and was stationed at Camp Sherman, Chillicothe, Ohio, where he remained until honorably discharged on December 28, 1918. In February, he was appointed assistant medical examiner of the Federal Vocational and Educational Board, and held that position at the time of his death. Dr. Gould was a member of the Massachusetts Medical Society and of the Norfolk County Medical Association.

EVERETT WHITE, M.D.

DR. EVERETT WHITE was born at Whitehall, N. Y., in 1870. He graduated from the College of Physicians and Surgeons, Maryland, in 1897, and began to practise in Lynn twenty-one years ago.

He was a member of the American Medical Association and of the I. O. O. F.

He was the youngest of eight children, seven of whom were boys and survive him. He leaves two brothers who are physicians, Dr. P. P. White of North Granville, N. Y., and Dr. Robert C. White of Willimantic, Conn. He had a nephew, Dr. J. Robert White of Lynn, who is a surgeon on the *U. S. S. Melville*, who has been in France for two years and is now in Cuba.

Four years ago he married Susie Archer Fellows, who survives him.

Three months ago Dr. White was obliged to give up practising and went to the home of his brother, Duane White in Roxbury, where he died February 27, 1919, from tuberculosis.

He was 48 years old. Services were held from his late residence at 268 Chatham Street, East Lynn, on Saturday, March 1. He was buried in Locust Grove Cemetery, Ipswich, Mass.

Correspondence.

A LETTER FROM FRANCE.

Camp Hospital No. 97,

A. P. O., 921, A. E. F., France,
March 19, 1919.

Mr. Editor:—

I thought you might be interested to know that I am still in France on duty with the American Regulating Station B and Camp Hospital No. 97, at St. Dizier, France. I am doing laboratory and internal medicine work. We are kept very busy here at

present since the hospitals around us are closing up and the men from those places are sent to us for hospital care and treatment. We do not know when we shall be ordered back home. The only thing we know is that we are going to stay here until our work for the glorious cause is duly finished and well done. It surely feels very hard to be away from good old Boston for over a year, but one must be satisfied and honored to have an occasion to serve his country with the best in him. I sincerely hope that we shall all be back soon and have the grand pleasure of meeting our friends again and that the period of reconstruction should begin with the greatest speed throughout the entire world, so that normal days and the progress of science shall not perish from this earth.

Greetings from the beautiful and heroic France.

Sincerely, one of your members.

LIEUT. DAVID B. MEDALIA, M.C.

NOTICES.

THE FORSYTH DENTAL INFIRMARY FOR CHILDREN.

Undergraduate Assistants.

During the months of June, July, August, and September, an opportunity is offered by the Trustees of the Forsyth Dental Infirmary for Children to a limited number of undergraduate students to act as assistants in the clinics of the Infirmary. This privilege permits a student to obtain unusual clinical advantages in the various departments of the institution where operative dentistry, orthodontia, nose and throat and oral surgery, radiography, pathological diagnosis and research work are continually carried on.

Operators' gowns, instruments, and filling materials are furnished. Over three hundred children are treated daily.

For further details apply, before May 15, to the Director, Dr. Harold DeW. Cross, 140 The Fenway, Boston, Mass.

Permanent Staff Appointments.

A competitive examination of graduates in dentistry (of less than three years' standing) for appointments to positions on the Permanent Staff for full and one-half time service will be held early in June at the Infirmary.

Appointments will be made for one or two years as follows:

Full time service requiring operating five and one-half days a week, at a salary of \$1000 a year.

One-half time service, requiring operating six half days a week, either forenoon or afternoon, at a salary of \$500 a year.

These appointments will be made subject to satisfying the requirements of the Massachusetts State Board of Registration in Dentistry and to "qualifying" in the practical work of the clinics during one month's trial.

Members of this staff are entitled to the advantages of reports and clinics by experts in the various branches of dentistry, from different parts of the world, in addition to the numerous special clinics and lectures.

Operators, after serving four months, are eligible, by qualifying, for appointments in the special clinics where post graduate work is given.

The operators on this staff have the advantage of the clinics and lectures of the Post Graduate School of Orthodontia.

The Infirmary clinics provide unusual advantages in the various departments of the institution where operative dentistry, orthodontia, nose and throat and oral surgery, extracting, rovocaine technic, radiography, pathological diagnosis and research work are continually carried on.

The average number of cases treated daily in the various clinics is over 300.

Supplies and necessary operating instruments are furnished; up-to-date apparatus, including electrical engines, sterile instrument trays, fountain cuspidors, compressed air, and the modern operating-room-type of lavatories are available for use.

A diploma of service will be issued by the Trustees to each member of this staff who has completed this term of service in a satisfactory manner.

Applications for the above positions should be made not later than May 15.

Information and the date of the examination will be furnished to those interested.

Harold DeW. Cross, D.M.D., Director, 140 The Fenway, Boston, Mass.

UNITED STATES CIVIL SERVICE EXAMINATION.

MEDICAL ASSISTANT (MALE), \$2,000.

May 13, 1919.

The United States Civil Service Commission announces an open competitive examination for medical assistant, for men only. A vacancy in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at \$2,000 a year, and future vacancies requiring similar qualifications at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to review the statements of therapeutic and curative effects of proprietary medicine; to familiarize oneself with the current therapeutic literature of the various schools of medicine; to assist in the preparation and trial of cases under the Food and Drugs Act, etc. Ability to translate foreign medical literature is desirable.

Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General education and medical training ...	35
2. Practical or professional experience and fitness	45
3. Publications or thesis (to be filed with the application)	20
Total	100

Under the first two subjects competitors will be rated upon the sworn statements in their applications and upon corroborative evidence adduced by the Commission.

Applicants must show that they have at least an academic degree, that they are graduates from a medical school of recognized standing, and that they have had at least six years' subsequent experience in the practice of medicine or two years' subsequent experience in pharmacological investigations.

If a thesis is submitted under the third subject it must be of at least 500 words and must present the results of original investigational work on the part of the applicant in some phase of medicine or pharmacology, or be a discussion of any one of the following subjects:

1. What evidence is necessary to establish the therapeutic value of a drug preparation?
2. What is the value of the "patent" medicine?
3. What are the principles of the treatment of disease?

Applicants will be admitted to this examination regardless of their age, but at the request of a department making appointments, certification will be made of eligibles who are within reasonable age limits.

Applicants must submit with their applications their unmounted photographs, taken within two years,

with their names written thereon. Proofs or group photographs will not be accepted.

Applicants will be admitted to this examination regardless of their residence and domicile; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year previous to the examination, and who have the county officer's certificate in the application form executed, may become eligible for permanent appointment to the apportioned service in Washington, D. C.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical certificate, and must be filed with the Civil Service Commission, Washington, D. C., with the material required, prior to the hour of closing business on May 13, 1919.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting of the Suffolk District Medical Society will be held April 30, 8.15 P.M., at the Boston Medical Library, 8 The Fenway.

Speakers:

Dr. David L. Edsall. "Some Relations of the Practitioner to Industrial Medicine."

Dr. Cecil K. Drinker. "An Unusual Type of Metallic Poisoning."

J. RAPST BLAKE, M.D., *President*.
GEORGE R. MINOT, M.D., *Secretary*.

CENSORS' MEETING.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 1, 1919, at 4 o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least two weeks before the examination.

GEORGE R. MINOT, M.D., *Secretary*.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.—The annual meeting of the Essex South District Medical Society will be held at the Relay House, Nahant, Wednesday, May 14, 1919, at 6.30 P.M.

Dr. Hugh Cabot will be the guest of the evening and will speak on the "Development of the Treatment of Wounds, 1916-1918."

DR. J. J. EGAN, *President*.
DR. H. P. BENNETT, *Secretary*.

CENSORS' MEETING.—The Censors of the Essex South District Medical Society will meet at the Salem Hospital, May 1, 1919, at 4 P.M., to examine candidates for admission to the Massachusetts Medical Society. Application blanks can be obtained from the Secretary, Dr. H. P. Bennett, 41 Lewis St., Lynn.

CENSORS' MEETING.—The Censors of the Essex North District Medical Society will meet for the examination of candidates at Hotel Bartlett, Main Street, Haverhill, Mass., Thursday, May 1, 1919, at 2 P.M.

Candidates should make personal application to the Secretary and present their medical diploma at least two weeks before the examination.

J. FORREST BURNHAM, M.D., *Secretary*.

The Boston Medical and Surgical Journal

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A NOTE ON SOUTHARD'S ORDER OF EXCLUSION IN PSYCHIATRIC DIAGNOSIS.*

By LAWSON G. LOWREY, A.M., M.D., BOSTON,

Chief Medical Officer, Psychopathic Department, Boston State Hospital; Instructor in Neuro-pathology and in Psychiatry, Harvard Medical School.

SOUTHARD has made an important contribution to the technique of diagnosis with his key principle dealing with the order of exclusion of the various great groups of mental diseases (*Jr. of Laboratory and Clinical Medicine*, IV, 2, November, 1918, page 31). His principle may be stated as follows: Diagnostic data should be considered according to a definite order of exclusion of psychiatric groups. Not the least important part of his contribution has been the series of disease groups erected. His eleven groups include all of the disease and defect conditions that have been separated from time to time, and set up as entities. At the present time, however, I am concerned not so much with the value and necessity for such grouping as with the principle of orderly exclusion, and

particularly with the order laid down by Southard as involving certain of his groups.

It appears to me that this principle of exclusion of groups according to a certain order is of the highest importance. We are aware of the fact that diagnosis by exclusion is of great value in general medicine. Furthermore, we are all familiar with the idea of presenting symptoms and diagnosis by exclusion of the various disease processes which might give rise to such a presenting symptom. In psychiatric diagnosis there are apparently no single presenting symptoms. Instead, we deal in each case with a complex of symptoms producing a conduct disorder or an anomaly of reaction which in itself is not a distinctive symptom. We then proceed to build up a picture of the total patient, including family and personal (intelligence, make-up, and general reactive) background of the individual case as it has presented itself. Now, each bit of data that we collect while serving to make up the total picture of the case also serves as an excluding process to narrow down our field of inquiry. We should always thus proceed from mass to detail, although this is particularly difficult to impress upon younger psychiatrists and students. Ordinarily we go through such a process of building up and exclusion rapidly and without particular analysis of the methods which we pursue.

*A contribution to the 1919 Series of Psychopathic Hospital Publications. Read before the Boston Society of Neurology and Psychiatry, March 20, 1919.

For the training of psychiatrists, however, it is necessary to have a definite method in our procedures of diagnoses. Since, then, we attempt to get all of our data together before attempting to arrive at a diagnosis, and since, too, we must prepare some type of definite process of arriving at a correct diagnosis by differentiation, it seems to me that this orderly scheme for the analysis of our diagnostic data is very necessary.

Granted then that the idea of orderly exclusion is an important one for differential diagnosis in psychiatry, we now need to know how to determine the order of exclusion. There are conceivably a number of different principles on which we could erect an orderly diagnostic scheme of the mental disease groups. We could, of course, erect a statistical scheme and arrange each group in order according to its numerical frequency. This, however, would give us a series of poorly related groups, since groups difficult of differentiation from one another would fall into no definite order. Probably, also, our scheme would vary from institution to institution, since we find such great variations in the frequency of various psychoses as reported by the different institutions in the State of Massachusetts for any one year. I cannot see that such a scheme would give rise to a logical ordering of groups that would be of value either to practitioner, teacher, or student.

It seems that the order of the groups should be determined by the following principles:

1. *Basic importance.* By this I mean that what we call one disease, such, for instance, as syphilis of the nervous system, may be the nidus around which the symptoms or abnormal mental state ordinarily occurring in other groups may arise; or that a defect condition of a particular type may be the basis on which other and presumably distinct abnormal states may arise. Now an ordinal key based on such a principle as this would probably have as a first heading, Constitutional Inferiority; 2—Mental Deficiency; 3—Epilepsy; 4—Neurosyphilis; 5—Alcoholism, rated in this instance upon their probable statistical frequency as bases for other states. Such a scheme as this is in many ways logical, but seems to me to proceed from the simple to the complex, whereas in the process of actual diagnosis our tendency (measured both statistically and introspectively) is to pro-

ceed from complex to simple. Accordingly, before we arrive at a diagnosis of psychopathic inferiority we invariably exclude all of the so-called disease states which may arise on the basis of psychopathic inferiority. However, it is to be maintained that this principle of excluding diseases or conditions or disease processes, which may be the basis of other and usually non-related abnormal states, is of the highest importance.

2. *Accuracy of Data.* We should, of course, exclude first all those groups in which our objective data of diagnosis are the most reliable. Such objective data are most precise in neurosyphilis, feeble-mindedness, epilepsy, alcoholism, somatic disease, and focal brain disease, since in these groups the history or laboratory or physical findings are more precise than in the other groups, and, furthermore, there are more objective data obtainable.

3. *Similarities of Etiology and Symptomatology.* In the collection of data and in their differentiation (diagnosis) we want to exclude first the groups in which the etiology is known or in which the direct casual agent is frequently demonstrable. In the statistical manual of the A.M.P.A. we find at the head of the list all of those conditions in which there is actual demonstrable damage to the brain. In other words, all groups in which the etiology is known stand well toward the head of the list, leaving toward the bottom those whose etiology is unknown or is doubtful, or is endogenous. If we first exclude all of the exogenous and organic cases we may then proceed to a study of the psychogenesis or the abnormal make-up, etc., attempting to demonstrate thereby the diagnosis and the psychopathology of the condition. Certainly, a purely etiological grouping is the one we wish in the end to attain, but even if the etiology of all the psychoses were known we should still have to erect an ordinal scheme, and that on other principles than just this one.

From the standpoint of symptoms it seems to me best to consider as sequential groups those with similar symptoms, so far as possible. In order that we may precisely place our difficulty in diagnosis in the consideration of the symptom complex which may be caused by several agencies. We ordinarily group them together for evaluation and proceed to exclude somewhat according to the statistical frequency.

4. *Therapeutic Possibilities.* These should

always be kept in mind, but this principle is not the most important for determining the order of exclusion in diagnosis.

5. *Outcome.* The majority of our mental disease groups have been erected on a basis of outcome. However valuable this method may be in determining what groups of mental disease actually exist, it is not of value in determining the order of diagnostic exclusion. We could, of course, make a scheme arranging our groups according as they terminate in dementia, defect, recurrence, or recovery, but this is of little value and our prognosis is sufficiently frequently wrong to make it distinctly undesirable.

From the above analysis it is obvious that no one principle is sufficient to cover all of the possibilities of ordering the groups. We should instead attempt to place each group according to the number of principles which seem to indicate its position. Personally, I find that in diagnosis of any case I want to exclude certain conditions first of all. These are syphilis, feeble-mindedness, epilepsy, alcoholism, bodily disease, and organic brain disease, somewhat in the order mentioned. I also find that I must determine the type of pathological mental state present. Having done this, which represents usually a great deal of work and the accumulation of all possible data about the patient, I can then proceed to a differential diagnosis. All of the pathological mental states can apparently be grouped into a relatively small number of what Meyer has called "reaction types" or "reaction complexes," meaning thereby presumably mental symptom complexes. I ordinarily conceive two broad groups of pathological reaction types, the organic-toxic-epileptic-defect group, with symptoms of *differential* merit lying primarily in the intellect (sensory) field with secondary emotion-lability disturbance; and the schizophrenic-cyclothymic-psychoneurotic-psychopathic group with symptoms primarily in the emotion-will and secondarily in the other fields. It is possible and necessary rapidly to determine to which of these broad groups a given case belongs, so narrowing our field of inquiry rapidly and accurately. Southard's first seven groups belong to my first group, and the other four fit into my second group.

Southard has grouped the mental diseases as follows:

1. Syphilopsychoses (neurosyphilis).

2. Hypophrenoses (feeble-mindedness).
3. Epileptoses (epilepsy).
4. Pharmacopsychoses (alcohol, drugs, poisons).
5. Encephalopsychoses (focal brain diseases).
6. Somatopsychoses (symptomatic, toxic, infectious).
7. Geriopsychoses (Presenile, senile).
8. Schizophrénoses (dementia precox, paraphrenia).
9. Cyclothymoses (manic depressive).
10. Psychoneuroses.
11. Psychopathoses (other psychoses or psychopathia).

I want now to examine in some detail this order. To me it is obvious that the syphilitic group should head any key for orderly diagnosis because of the basic importance, because of the therapeutic possibility, and particularly because of the accuracy of the data available for diagnosis. For similar cogent reasons hypophrenia should stand second, but here the principal reason will be the basic importance, although both of the other points are worth considering. The position of epilepsy is possibly a point to question, but if we remember the wide variety of states which may arise in connection with epilepsy and, further, the accuracy of the history in the majority of cases, its position seems clear. Similarly, alcohol, drugs, and poisons should come next, because of their frequency, the multiplicity of the disease states encountered and the frequent resemblance of alcoholic states to others of more obscure causation. It is particularly with the orderly placing of groups V and VI that I am concerned. These groups clearly shade into one another on grounds of etiological and symptom similarity. Hence, they should be in sequence. Possibly on the ground of therapeutic possibility, the somatic diseases should be placed first. This, however, is not quite clear. However, on basic importance it would seem to me that the somatic diseases need first to be excluded. Many somatic diseases also involve the brain directly instead of secondarily through the medium of toxins, however elaborated. Hence, we find need to determine the presence or absence of somatic disease in cases which seem to be problems of brain disease.

But it is particularly from the standpoint of symptom similarity that I would urge the

change in order. Group 7, including the senile psychoses, is clearly more nearly related in symptoms, and in most cases in the mechanism of production, to the brain diseases than to the somatic. To be sure, this was one reason why Southard adopted this particular order. He wished to avoid juxtaposing two such symptomatically and geriatrically similar groups. However, as I have said before, it seems to me always wise to consider in order and in detail such similar groups, since then we always hold sharply in mind the confusing groups and our analysis is apt to be more adequate from the point of view of both.

Let us contrast the alcoholic and somatic groups and take up first the symptom analysis of the alcoholic group. We have to do with pathological intoxication, delirium tremens, alcoholic hallucinosis, dipsomania and acute alcoholism, Korsakow's, the alcoholic paranoid conditions and alcoholic dementia. Of these certain ones need not be further considered. Delirium tremens is found difficult to differentiate from the endotoxic deliria, since there is no good and positive symptom for such differentiation. Tremor occurs in either group, although more likely in tremens. Elevation of temperature is very common in tremens cases even in the absence of any demonstrated pneumonia. The character of the hallucinations and of the clouding of consciousness is not at all characteristic. The fundamental points of differential value in any doubtful case are not to be found in the mental symptoms, but in the demonstration of a physical disease capable of causing a delirium in the absence of alcohol; or the absence of such a disease, combined with a history of the use of alcohol in quantities sufficient to give rise to the symptoms. Cases presenting the symptomatology of alcoholic hallucinosis in the absence of alcohol, but in the presence of acute infectious disease are rare, but do occur. In the recent influenza epidemic a considerable number of such cases have been seen in this particular institution. The cases presenting the symptoms of acute alcoholic hallucinosis often show many symptoms allied to delirium tremens, although in the typical case the differential diagnostic problem with alcoholic hallucinosis is paranoid dementia precox. Our experience makes it evident that either delirium tremens or the rather typical hallucinosis may be closely simulated in cases arising

from somatic disease, including acute infections, chronic kidney disease, etc.

Korsakow's syndrome is a good instance of the order of our differential diagnosis. Most commonly due to alcohol, it may also be caused by acute infectious disease, by chronic endotoxic diseases, by cerebral arteriosclerosis, and occurs in senile cases in the absence of all of these causes. In any Korsakow's case we would exclude its various causes in just this order. Similarly in a case of intellectual deterioration, we would proceed in the same order to exclude alcoholism, chronic somatic disease, brain disease and senility, this in somewhat the order of complexity of study and facts to be obtained, ranging down to the simplest, since senile deterioration is likely to have less complicating factors than the others.

Also we find that the symptom groups in the alcohol, drug, and poison series have, as a rule, little relation to such groups in the focal brain diseases. There are cases of focal brain disease showing delirious states, or Korsakow's syndrome, etc., but these are certainly in the minority. In the majority of cases we have to do with symptoms of dementia, of slow development, and chronic character. Encephalic diseases, however, have a distinct symptomatic relationship to the senile psychoses. We are all aware of the proverbial difficulty in differentiation between senile dementia and arteriosclerotic states. Brain tumor cases with marked mental symptoms are quite likely to show them in the form of dementia, which is not entirely characteristic. In both of these groups we are dealing with processes leading not only to marked interference with function, but to actual loss of brain cells. Hence, we should naturally expect a similarity in the symptoms between brain disease and the senile diseases.

If we consider also the fact that many somatic cases are distinguished only with difficulty from encephalic diseases, it seems to me that this position is strengthened. Well known are the difficulties in determining in cardiorenal and vascular cases whether we are dealing with a toxic somatic condition or with actual vascular disease of the brain.

Now, if we can so easily demonstrate the similarity in symptoms between the pharmacopsychoses and the somatopsychoses on the one hand, and the encephalopsychoses and the geriopsychoses on the other, and can

further show that from the other points of view the groups should be arranged in this order, I believe it is logical to arrange them in an ordinal exclusion scheme in such a succession that this set of diagnostic difficulties is recognized. Hence, I propose that Groups V and VI be interchanged (making V somatopsychoses and VI encephalopsychoses), thus rendering the scheme somewhat more logical and somewhat better adapted to the problems of differential diagnosis in psychiatry.

CHANGING METHODS AND ADVANCES IN THE TREATMENT OF PROGRES- SIVE DEAFNESS FOLLOWING CHRONIC CATARRHAL OTITIS MEDIA. (SEC- OND COMMUNICATION).*

By FRANCIS P. EMERSON, M.D., F.A.C.S., BOSTON,

Major, M. C., U. S. Army.

In the etiology of chronic secretory, exudative, catarrhal, or hypertrophic otitis media, aurists are in accord as to the pathology and necessary treatment of the eustachian tube and middle ear, but there is still a wide diversity of opinion in regard to the conditions that have preceded the chronic state and as to what steps are necessary to arrest or improve a disease that affects the majority of our office clientele. If we consult our latest textbooks we find that adenoids are mentioned as first in the list of causes, and here, especially in children, there would be no controversy. The second (still to quote from the latest textbook), recurrent attacks of subacute catarrhal otitis media, in which resolution is never quite complete, is given as a cause. Third, frequent attacks of acute rhinitis, each attack giving rise to more or less tubo-tympanic congestion. Fourth, obstructive nasopharyngeal lesions resulting in chronic tubal catarrh which later involves the tympanum. The writer would respectfully submit as a substitute for these subdivisions, except the first as a primary cause, the result of early infections, usually the sequelae following the infectious diseases and la grippe. These diseases leave a streptococcus focus which becomes chronic and is indefinitely subject to acute exacerbations, causing recurrent attacks

of subacute catarrhal otitis media, frequent attacks of what seem to be acute rhinitis, yet are not fresh infections, but the lighting up of this chronic focus, and lastly making obstructive nasopharyngeal lesions potential factors in deafness only because the impaired drainage keeps up the chronic infection. In taking the histories of these chronic cases one is impressed with the fact that these patients have had various manifestations of the same infection, dating back to an attack of diphtheria, measles, scarlet fever, or la grippe. These foci have resulted in secondary involvement of the lymphatic or osseous tissues, and such focal processes are subject to acute exacerbations, while existing as a low grade infection in the interval. These exacerbations are so constant that it is a question whether acute infections ever take place in a normal nasopharynx. The writer confesses that in late years he has not been able to make a differential diagnosis between otitis catarrhalis adhesiva and the catarrhal or hypertrophic processes from the viewpoint of etiology. Many cases showing but little evidence of secretory changes in the membrana tympani with the nasopharynx clean and no thickening of the mucous membrane have had a definite chronic focus in the throat. In these cases the writer formerly relied upon the hearing test for a diagnosis. He now believes all of them to be due to a toxine, and any differential diagnosis should be based on the tissue reaction in the tympanum rather than upon any difference in origin. Some of the cases here cited show the final stage of a catarrhal process where the hypertrophic changes have been succeeded by secondary atrophy and nerve degeneration after a steady progression from the throat or nasopharynx to the eustachian tube, tympanum, and inner ear. Many other cases with apparently the same etiology are followed by extreme deafness showing toxic nerve changes that seem to have been caused by absorption directly through the lymphatics or blood streams. The toxic focus that caused the nerve changes in the inner ear probably accounts for the intestinal toxemia referred to by Stucky and other writers.

May 28, 1917. E. J. P. Born, Rhode Island, 45 years. Married. Merchant. P. H., diphtheria, measles, scarlet fever. No aural history in childhood. Rheumatism seven years ago. Laid up six to seven weeks. Acute infections in the head constantly. In 1901 had la grippe

* Read before the American Otological Society, Atlantic City, May 25, 1918. (Reckard.)

and lost the hearing in the right ear gradually. No history of discharge. Tinnitus with bad weather. Hearing varies with climatic conditions. Not so good when tired. History of operation in left nose twenty years ago. Never been right since. *Examination*.—*Naris*. Left posterior spur and senecchia almost closing the posterior naris. Contact with posterior end of inferior turbinate. Cryptic tonsillar disease. Central adenoid. Both eustachian tubes obstructed at the isthmus. Right more open at pharyngeal end. *Ears*. A. D.—Membrana tympani indrawn. Capillaries injected along the manubrium. L. R. gone. Ground glass appearance. A. S.—Membrana tympani indrawn. Ground glass appearance. All folks above 512 heard.

R.	W. V.	L.
1 6/25	R 512C ²	1 6/25
11"/24"	6"/22"	6"/22"
6"/9"	256C ³	6"/8"
	+CW	
96	L. L.	96

No alcohol, tobacco moderate, no venereal history. X-Ray of the teeth and sinuses negative. Operation at Brooks Hospital, May 29, 1917. Senecchia removed. Spur removed with saw. Both antra opened. Tonsil and adenoid operation. (Right tonsil contained free pus.)

November 16, 1917. Right eustachian tube. Dnel's electric bougie (constriction thick at isthmus and would admit only the second size Yaukauer bougie). Injections along the manubrium disappeared. Tinnitus stopped. Reaction caused return of tinnitus and tube could not be bougied.

December 28, 1917. Right eustachian tube. Electrolysis.

February 28, 1918. Both tubes open. Bougied, argyrol 20 per cent. on cotton applicator. Sinusoidal current (multiplex and slow), using each five minutes in each ear.

The above hearing test shows the loss of function resulting from a toxic focus. As complications we have marked nasal obstruction, lymphoid tissue in the vault, and a decided narrowing of both eustachian tubes at the isthmus with diseased tonsils, *the free pus in the tonsils being the most important*.

Status Presens. After treatment for a year his eustachian tubes are open, the tinnitus and feeling of obstruction gone, but his hearing remains unchanged. He has had one acute infection during the year at the time of a general epidemic.

If we admit that a pyogenic focus can be present throughout life as a streptococcus infection, subject to acute exacerbations, then we must concede that toxemia with subsequent nerve degeneration plays a more important part in non-suppurative middle ear disease than we have supposed in the past. From analogy we would expect that the synapses of the auditory pathway that are sensitive to the poisons of quinine, salicylic acid, morphia, alcohol, tobacco, etc., would also be vulnerable to constant toxic absorption from a focal process. Clinically this seems to be so, and also there seems to be a selective action that sometimes involves the cochlear and sometimes the vestibular branch of the auditory nerve.

It is known by all aurists that following a suppurative otitis media the ossicular chain may be broken by necrosis and sloughing, leaving wide gaps in the conducting apparatus; in addition, the membrana tympani may be gone and yet the patient may hear very well. Cases of effective otitis media may show elacarius deposits with marked thickening of the whole drum, and yet there may be a fairly good functioning ear. On the other hand, many cases of catarrhal deafness may show but little change in the membrana tympani and yet have considerable loss of hearing, especially in the upper register. Is this due to changes in the conducting apparatus or is it due to beginning auditory nerve degeneration, or to both causes? In the judgment of the writer it is not necessary to have marked changes in bone conduction, unless it be to raise it in the early stages to have toxic nerve deafness in connection with chronic hypertrophic otitis media. In these cases there is often a hearing test that is almost identical on both sides. Represented graphically it would be like the following for a chronic condition:

Malleus movable. Folks above 512 heard faintly or not at all. Tinnitus marked.

R.	W. V.	L.
Shout	Rinne 512C ²	Shout
12"/22"	W>+	10"/20"
	L. L.	
512		512

A hearing test like the above cannot be explained on the theory of a conduction deafness. It is not conceivable that both ears would show the same degree of impairment throughout the scale. On the other hand, if we remember that the auditory nerves, after passing to the second

temporal convolution, send as many fibers to the opposite side of the brain as remain on the proximal side, then we can understand how a toxic process would ultimately affect both ears to the same extent.

This patient, 48 years of age, commenced to be deaf as a girl, following scarlet fever. Diseased tonsils with a low grade pharyngitis and progressive loss of hearing without marked attacks of tonsillitis was the subsequent history. In cases of this type the writer believes that in the hypertrophic stage of catarrhal otitis media mechanical obstruction to the sound waves is an important factor in impairment of hearing. When, however, secondary atrophy has commenced and the infection has extended well into the eustachian tubes as a chronic process, then the effect of toxemia upon the auditory labyrinth or auditory nerves is equally important with extension from the tympanum. Tinnitus, which is only another name for vestibular irritation, has for its exciting cause changes in the eustachian tubes more often than anywhere else. The loss of tension or the relaxation of the membrana tympani is not so much a cause of deafness, but this condition indicates a wide open and usually infected eustachian tube with secondary atrophy, except in a few cases when it is due to auto-inflation or repeated politerization.

The following case was treated and the hearing tests made by Lient, J. R. Gorman, M.C.

Boyer, Louis—22 years. Family history negative. Present illness: For the past three years the patient has had tinnitus like escaping steam. At first this was confined to the right ear. Six months later it was noticed in the left ear. The hearing became noticeably impaired about two and one half years ago. Tonsillitis and head colds occasionally with increase of tinnitus.

Influenza. Patient has influenza October 1918. At this time his condition was very much aggravated in regard to his hearing and the tinnitus. *Special Examination.* A. S.—M. T. retracted. Cone of light but little distorted, if any. Appearance of M. T. indicates but little pathology. A. D.—M. T. shows slightly more retraction than in opposite ear, with but little distraction of the cone of light. *Nose.* High bulbous enlargement of septum which is more marked on the right side. *Posterior Nares.* Shows posterior tip of right inferior turbinate

hypertrophied and almost in contact with the right side of the septum. M. M. of septum in the region of the right inferior turbinate very much thickened, showing frequent contact. *Tonsils.* Hypertrophied showing muco-pus on both sides. *Hearing Test.*

Right Ear	Watch	Left Ear
12 inches	Loud whisper	24 inches
5 feet		4 feet
ac 3		ac 10
— 3	(512C")	— 3
bc 8		bc 7

Patient was admitted to the hospital December 23, 1918. The nose, epipharynx, and throat were treated daily with 25 per cent. argyrol rubbed over the surface of the M. M. until December 26, when tonsillectomy was done. Treatments resumed locally until December 30, when a submucous resection of the septum was performed. *General Treatment.* January 2, 1919, the patient was sent to the ward and put to bed. Magnesium sulphate, one ounce, the first morning, and drams two for the four following days was given. High cleansing enema once a day for seven days. Pilocarpine hydrochloride grs. $\frac{1}{20}$ to test patient's reaction. Each morning for the five following days a subcu. of $\frac{1}{10}$ pilocarpin was given, and the patient well covered with blankets. During this time the patient had local treatment of the nose, epipharynx and pharynx with 25 per cent. argyrol.

The following tests cover the time the patient was under observation:

Dec. 28, 1918.

Right Ear	Watch	Left Ear
12 inches		26 inches
5 inches	whispered voice	4 feet
ac		ac
— 3/9	512C"	— 14/10
bc		bc

Jan. 5, 1919.

Right Ear	Watch	Left Ear
12 inches		24 inches
5 inches	whispered voice	4 feet
ac		ac
— 3/8	512C"	— 7/10
bc		bc

Jan. 17, 1919.

Right Ear	Watch	Left Ear
12 inches		30 inches
15 inches	whispered voice	4 feet
ac		ac
— 3/10	512C"	— 14/10
bc		bc

Jan. 23, 1919.

Right Ear	Watch	Left Ear
20 inches		43 inches
18 inches	whispered voice	8 feet
ac		ac
— 5/10	512C"	— 15/15
bc		bc

The accompanying hearing test shows the result of a long continued toxic process acting in the same way as the systemic poisons upon the auditory labyrinths or auditory nerves. These cases are very common in which the hearing test is almost identical on both sides, the stapes movable, and in which a diagnosis of otitis catarrhalis adhesiva is often made. The clinical history is one of frequent days marked by malaise, the hearing is worse with the exacerbations of the throat irritation or exhaustion, and the etiology dates back to a streptococcus infection following gripe or the infectious diseases. The writer has seen many similar cases that were examined earlier, while the Rinné test was still positive, that seemed to point to some systemic poison and in which syphilis was considered as a probable cause. A careful history often revealed a very definite beginning of the deafness, with the exciting cause still active after a long number of years. In many cases the pharyngeal vault is free of lymphoid tissue and there is no history of head infections. The patient may even deny any tendency to sore throat and yet the degenerate and infected tonsil in adults is usually the seat of the auto-intoxication and deafness. We may not be able to make a diagnosis of a toxic focus, however, without noting the injection of the pillars of the palate, the perverted secretion of the pharynx, and the location of acute exacerbations, the macroscopic appearance of the gland itself not being sufficient ground upon which to base our conclusions. In association with these cases of lymphoid infection are many latent antra and apical abscesses of the teeth that may be overlooked more easily than pyogenic foci elsewhere, as, for instance, the ethmoid labyrinth. In chronic hypertrophic otitis media frequent attacks of rhinitis or recurring attacks of tubo-tympanic congestion are the rule, because the primary cause remains latent, and exhaustion is as productive of an acute exacerbation as is exposure. Whether the otoscopic examination of the tympanum indicates a previous exudative catarrh or is clear, depends upon whether the toxine was absorbed directly through the lymphatics or blood stream, or first caused a low grade process in the epipharynx, tube and tympanum. Both conditions may obtain in the same patient with the same etiology.

March 18, 1918. Mrs. R.: 52 years. Born, Massachusetts. Married. P. H. Always well

and not subject to acute infections. Commenced to grow deaf 20 years ago. There has been a gradual loss of hearing each year since. She has been under the constant care of a good aurist whose treatment has been directed largely to the tubes. Vertigo, no history of. Tinnitus, slight once for 24-48 hours. Headaches, history negative. Hearing not affected by climatic conditions. Scarlet fever at 4 years, diphtheria at 14 years, measles at 10 years. Throat trouble commenced as a child. *Examination*—*Ear*. A. S. But little change in M. T. A. D.—M. T. Ground glass appearance. Manubrium not injected. Indrawn. L. R. gone. No areas of atrophy or thickening. *Nasopharynx*—Breathing free, septum straight, no posterior hypertrophies. Drainage good. No infection. Accessory sinuses negative. R. Fossae free. *Pharynx*. Low grade pharyngitis, especially marked on the sides. M. M. looks thickened and darkly congested. *Tonsils*. Cryptic tonsillar disease. Both small and submerged. Patient now states that for years she has had an unusual amount of thick secretion in her throat, especially in the morning. That it is not unusual for her to get up nights to clear her throat and that the throat is always rough. *Teeth* show no apical abscesses.

Hearing		
R.		L.
Shout	W. V.	Shout
7"/15"	R 512 ⁺	5"/15"
	W ₂ +	
	G.	
—	L. L.	—
256		256

1024C⁺ faint in A. D.; 2048C⁺ not heard in A. D.; 2048C⁺ faint in A. S. No stapes fixation (Gellé test negative.) Air and bone conduction both lowered.

Diagnosis: Both—Otitis media, catarrhal, chronic, with a low grade pharyngitis, the result of a chronic tonsillar infection. Beginning auditory nerve degeneration. *Treatment*: Tonsillar extirpation. Topical applications to pharynx.

It is well to emphasize in connection with this case the fact that it is not necessary to have a history of repeated attacks of tonsillitis, or to be able to demonstrate the presence of free pus in the degenerate type of tonsil so often found in patients between 40 and 60 years of age. All cases that are causing toxemia do have, in the experience of the writer, an accompanying low grade pharyngitis with roughness and a tendency to clear the throat on rising and perverted

secretions. In this case the right ear shows the result of an exudative catarrh in the right tympanum. The left membrana tympani is clear, of pearly luster, and the light reflex is present, yet the hearing tests are practically the same.

To conclude we find our etiology to consist in a chronic infection subject to acute exacerbations with varying degrees of virulency, constantly tending to invade contiguous as well as remote structures by continuity or through the lymphatics or blood stream. The tissue reactions in the tympanum, especially about the ossicular joints, seem to be the same as the reaction in other articulations to the irritation of a definite toxine. It is, therefore, obvious that treatment will be useless after secondary atrophy, arthritic changes in the ossicular articulations, or auditory nerve degeneration has taken place. The one serious problem is to establish immunity to a chronic infection. Drainage is essential, but there are secondary foci beyond our reach in many chronic cases. These cases must be treated on broad lines of corrected metabolism, hydrotherapy, out-of-door living, rest, etc., as well as locally, remembering that audition is only one function gone wrong in the symptom complex.

The improvement to be expected cannot be determined by the duration of the deafness or age of the patient, but by a careful examination. Very many cases can be helped, as shown by actual hearing tests. In others the process can be arrested. Many will have relapses on account of secondary foci and poor resistance. Others will show beginning auditory nerve degeneration, but eliminating those cases that have passed beyond our aid, there are still a large number where we can expect good results that will be in proportion to our thoroughness and patience in searching out and draining chronic toxic foci and curing the attending infection. One point that should be emphasized is that very early in the chronic catarrhs you may have beginning auditory nerve degeneration without marked lowering of the bone conduction, as well as changes in the tympanum.

Most of the cases here cited represent the terminal stage of a long-continued hypertrophic or catarrhal process. At the beginning, one ear is more involved than its fellow, but with time the infection extends to the opposite side, until, in many cases, the hearing may be identical. If the advance has been by way of the

eustachian tube and tympanum, the hearing for the two sides is more apt to vary than when the toxine acts directly by way of the lymphatics and blood stream. It is obvious that any improvement depends upon early removal of the cause and that any treatment by inflation or other means that does not take into consideration the existing infection is not only a loss of time, but makes the patient ultimately worse, except an occasional use of such treatment in the hypertrophic stage.

DAVID LIVINGSTONE AND THE TRANSMISSION OF DISEASE BY INSECTS.

BY E. W. GUDGER, PH.D., GREENSBORO, N. C.

State Normal College.

A NUMBER of years ago the present writer published in *Science* three historical notes on insect transmission of disease.¹ To these he now desires to add another under the above heading.

Those who are acquainted with David Livingstone's books know in what wealth of natural history notes they abound. He was a capital observer whom nothing seemed to escape, and the world was a great loser when, in 1835, there was lost a volume of his journal delivered for him by the Makololo chief, Sekeletu, to a trader to be transmitted to Mr. Moffat for safe-keeping. He states that his regrets were all the greater because "it contained valuable notes on the habits of wild animals." However, a large amount of valuable data, collected both before and after this catastrophe, are contained in his two books: "Missionary Travels and Researches in South Africa; Including a Sketch of Sixteen Years' Residence in the Interior of Africa," etc. New York, Harper and Brothers, 1858; and "Narrative of an Expedition to the Zambesi and Its Tributaries, etc., 1858-1864." This, of which his brother Charles is put down as joint author, although David Livingstone really wrote it, was also published in New York by the Harpers under date 1866. In addition to these, his journals from 1865 to his death in 1873 were collected, edited, and published in 1874 by his friend, Horace Waller. Livingstone's thirty-three years in Africa (from 1840-1873) resulted in a knowledge on his part of the southern part of that continent

and of its natural history, which was not equalled by any man of his time.

The pests of Africa are many and vicious, but more vexatious and more dangerous than the attacks of lion and crocodile were those of the tsetse fly and the mosquito. The one brought about the death of his riding and pack and food animals, the other of his servants, his companions, and finally of himself. He clearly understood that the bite of the former conveyed infection, and the strong inference is that he believed this to be true of the latter also. And it has seemed to me that in this day, when the attention of the whole medical and scientific world is so riveted upon the control of those two insects and the diseases they spread, that a brief statement of David Livingstone's researches and conclusions will be of interest and value.

Throughout the whole of Livingstone's books runs the story of the dangers and deaths resulting from the bite of the tsetse fly. However, from his landing at Cape Town in 1840, it was ten years before he worked his way far enough north to come into the domain of the fatal tsetse.

In 1850 Livingstone journeyed from Kolo-beng to the river Mahabe, and after crossing a bad stretch of desert he says, on page 93 of his "Travels and Researches," "The cattle, in rushing along to the water of the Mahabe, probably crossed a small patch of trees containing tsetse, an insect which was shortly to become a perfect pest to us."

A few pages further on (pp. 94-97) in the same chapter, occurs the following careful description of the fly and of the effects of its bite as noted in 1850:

"A few remarks on the tsetse, or *Glossina morsitans*, may here be appropriate. It is not much larger than the common house-fly, and is nearly of the same brown color as the common honey-bee; the after part of the body has three or four yellow bars across it; the wings project beyond this part considerably, and it is remarkably alert, avoiding most dexterously all attempts to capture it with the hand at common temperatures; in the cool of the mornings and evenings it is less agile. Its peculiar buzz when once heard can never be forgotten by the traveler whose means of locomotion are domestic animals; for it is well known that the bite of this poisonous insect is certain death

to the ox, horse, and dog. In this journey, though we were not aware of any great number having at any time lighted on our cattle, we lost forty-three fine oxen by its bite. We watched the animals carefully, and believe that not a score of flies were ever upon them.

"A most remarkable feature of the bite of the tsetse is its perfect harmlessness in man and wild animals, and even calves, so long as they continue to suck the cows. We never experienced the slightest injury from them ourselves, personally, although we lived two months in their habitat, which was, in this case, as sharply defined as in many others, for the south bank of the Chobe was infested by them, and the northern bank, where our cattle were placed, only fifty yards distant, contained not a single specimen. This was the more remarkable, as we often saw natives carrying over raw meat to the opposite bank with many tsetse settled upon it.

"The poison does not seem to be injected by a sting, or by ova placed beneath the skin; for, when one is allowed to feed freely on the hand, it is seen to insert the middle prong of three portions, into which the proboscis divides, somewhat deeper into the true skin; it then draws it out a little way, and it assumes a crimson color as the mandibles come into brisk operation. The previously shrunken belly swells out, and, if left undisturbed, the fly quietly departs when it is full. A slight itching irritation follows, but not more than in the bite of a mosquito. In the ox the same bite produces no more immediate effects than in man. It does not startle him as the gad-fly does; but a few days afterward the following symptoms supervene: the eyes and nose begin to run, the coat stares as if the animal were cold, a swelling appears under the jaw, and sometimes at the navel; and, though the animal continues to graze, emaciation commences, accompanied with a peculiar flaccidity of the muscles, and this proceeds unchecked until, perhaps months afterward, purging comes on, and the animal, no longer able to graze, perishes in a state of extreme exhaustion. Those which are in good condition often perish soon after the bite is inflicted, with staggering and blindness, as if the brain were affected by it. Sudden changes of temperature produced by falls of rain seem to hasten the progress of the complaint: but, in general, the emaciation

goes on uninterruptedly for months, and, do what we will, the poor animals perish miserably.

"When opened, the cellular tissue on the surface of the body beneath the skin is seen to be injected with air, as if a quantity of soap-bubbles were scattered over it, or a dishonest, awkward butcher had been trying to make it look fat. The fat is of a greenish-yellow color and of an oily consistence. All the muscles are flabby, and the heart often so soft that the fingers may be made to meet through it. The lungs and liver partake of the disease. The stomach and bowels are pale and empty, and the gall-bladder is distended with bile.

"These symptoms seem to indicate what is probably the case, a poison in the blood, the germ of which enters when the proboscis is inserted to draw blood. The poison-germ, contained in a bulb at the root of the proboscis, seems capable, although very minute in quantity, of reproducing itself, for the blood after death by tsetse is very small in quantity and scarcely stains the hands in dissection.

"The mule, ass, and goat enjoy the same immunity from the tsetse as man and the game. Many large tribes on the Zambesi can keep no domestic animals except the goat, in consequence of the scourge existing in their country. Our children were frequently bitten, yet suffered no harm; and we saw around us numbers of zebras, buffaloes, pigs, pallahs, and other antelopes, feeding quietly in the very habitat of the tsetse, yet as undisturbed by its bite as oxen are when they first receive the fatal poison. There is not so much difference in the natures of the horse and zebra, the buffalo and ox, the sheep and antelope, as to afford any satisfactory explanation of the phenomenon. Is a man not as much a domesticated animal as a dog? The curious feature in the case, that dogs perish though fed on milk, whereas the calves escape so long as they continue sucking, made us imagine that the mischief might be produced by some plant in the locality, and not by tsetse; but Major Vardon, of the Madras Army, settled that point by riding a horse up to a small hill infested by the insect without allowing him time to graze, and, though he only remained long enough to take a view of the country and catch some specimens of tsetse on the animal, in ten days afterward the horse was dead.

"The well-known disgust which the tsetse shows to animal excreta, as exhibited when a village is placed in its habitat, has been observed and turned to account by some of the doctors. They mix droppings of animals, human milk, and some medicines together and smear the animals that are about to pass through a tsetse district; but this, though it proves a preventive at the time, is not permanent. There is no cure yet known for the disease. A careless herdsman allowing a large number of cattle to wander into a tsetse district loses all except the calves; and Sebituane once lost nearly the entire cattle of his tribe, very many thousands, by unwittingly coming under its influence. Inoculation does not insure immunity, as animals which have been slightly bitten in one year may perish by a greater number of bites in the next; but it is probable that with the increase of guns the game will perish, as has happened in the South, and the tsetse, deprived of food, may become extinct simultaneously with the larger animals."

As to the care with which he investigated the means by which the poison was transmitted, we may read on page 320 of Volume I of his "Last Journals": "In examining a tsetse fly very carefully I see that it has a receptacle at the root of the piercer, which is of black or dark red color; and when it is squeezed, a clear fluid is pressed out at its point." Of this apparatus and of the fly itself, Livingstone gives figures in his "Travels and Researches," on page 612.

It is plain that Livingstone suspected the large mammals of being alternative hosts of the germs of tsetse fly poisoning, for on page 282 of the "Travels and Researches" (1858) he says that the left bank of the Leeba river "has tsetse and elephant." Then he adds, "I suspect the fly has some connection with this animal, and the Portuguese in the district of Tete think so, too, for they call it *Musca da elephant* (elephant fly)." Again, in his "Expedition to the Zambesi" (1866) he says on page 47: "From the spoor of buffaloes and elephants it appears that these animals [occur] in considerable numbers, and—we have often observed the association—the tsetse fly is common." Again and again the tsetse fly and big game are incidentally noted as occurring in the same districts, but on page 447, we have the distinct statement, "The destruction of all game by the advance of

civilization is the only chance of getting rid of the tsetse."

The tsetse fly disease, now designated by its native African name *Nagana*, is known to be caused by a minute motile protozoan parasite, *Trypanosoma brucei*, Bruce, whose original paper I have not seen ("Preliminary Report on the Tsetse Fly Disease or Nagana in Zululand," 1896), discovered the parasite in 1894, at least 40 years after Livingstone wrote the account excerpted above, and at or about the same time showed that the parasites were transmitted by tsetse flies (*Glossina*).

In view of what Livingstone wrote more than half a century ago, it will be of interest to quote from Prof. E. O. Jordan's "General Bacteriology" (fourth edition, 1904) the following paragraph on the tsetse fly disease of horses and cattle in South Africa:

"Certain tsetse flies, namely *Glossina morsitans*, and others of this genus, seem to be the only insects whose bite is able to convey the *nagana* infection, since ordinary biting insects that have fed on infected animals are not able to communicate the disease to healthy subjects. It is possible that the infection is sometimes transferred mechanically by the biting tsetse-fly, but there is also evidence that a cyclical development of the parasite occurs in the insect's body. After the first few hours after biting, when mechanical transference is possible, the fly is not infective until about the eighteenth day. It may remain infective for at least twelve weeks and probably much longer. There is reason to believe that the parasite exists in the blood of big game in parts of Africa, and that the fly becomes infected from these animals and transmits the disease to horses and cattle. As Bruce expresses it, the reservoir of the disease is found in the wild animals. It is said that the extermination of the larger wild herbivora in parts of southern Africa has rendered the tsetse-fly disease relatively uncommon."

Our admiration for Livingstone's careful description of the symptoms of tsetse-fly poisoning will be enhanced when we read the following excerpt from Park and Williams "Pathogenic Organisms" (fifth edition, 1914) on the symptoms of trypanosomiasis in animals.

"After an incubation period which varies in the same class of animals and in those of differ-

ent species, as well as with the conditions of infection, and during which the animal remains perfectly well, the first symptom to be noticed is a rise of temperature. For some days a remittent or intermittent fever may be the only evidence of illness. Later on the animal becomes somewhat stupid; watery, catarrhal discharges from the nose and eyes appear; the hair becomes roughened and falls out in places and the peripheral lymph nodes are enlarged. Finally the catarrhal discharges become more profuse and the secretions more tenacious and even purulent; marked emaciation develops; edema of the genitals and dependent parts appears; a staggering gait, particularly of the hind parts, comes on, in some forms passing on to paralysis. This is followed by death. There may be various ecchymoses and skin eruptions. Parasites are found in the blood more or less regularly after the appearance of the fever. They are often more numerous in the enlarged lymph nodes and in the bloody edematous areas than in the general circulation.

"The autopsy shows general anemia, an enlarged spleen with hypertrophied follicles, more or less gelatinous material in the adipose tissue, the liver slightly enlarged, a small amount of serous exudate in serous cavities, edematous condition, and small hemorrhages in various tissues. There is a relative increase of the mononuclears in the blood."

"The duration varies from a few days to many months. The prognosis seems to be influenced to a certain extent by the species of host. It is probably always fatal in horses. Some cattle recover. The cause of death is possibly a toxic substance, though no definite toxin has been isolated. Mechanical disturbances (emboli, etc.) also probably play a part in producing death."

Although Livingstone traversed Africa from ocean to ocean, from Quilimane to St. Paul de Loanda and return, he makes no mention of the present day terrible sleeping sickness due to *Trypanosoma gambiense*, transmitted by another tsetse-fly, *Glossina palpalis*. He frequently speaks of the tsetse-fly biting himself and his men but never with any untoward effects. It would be an interesting bit of research to trace the history of the sleeping sickness disease.

It might be expected that Livingstone from his large experience would have associated ma-

laria and mosquitoes, but here his ideas were far less definite than as to the tsetse-fly and its disease. However, we find some few references. He distinctly avows that the bad air of swamps does not cause malaria, although he recognizes that the leeward side of swamps, in a region of winds steadily prevailing from one point of the compass, is much more malarious than the windward side. However, in his "Expedition to the Zambesi" (1866), he distinctly says (page 389), in speaking of a small lake near Nyassa, "Myriads of mosquitoes showed, as probably they always do, the presence of malaria."

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PHYSICAL FITNESS FOR OVERSEAS SERVICE.

By LIEUT. JOHN F. MARTIN, M.C., GARDEN CITY, L. I., N.Y.,

Air Service Depot.

THE examination of officers and enlisted personnel has been an established custom at the Air Service Depot, Garden City, L. I., N. Y., since it was first established as an embarkation station for troops of the aeronautical service. While one would suppose that troops leaving training camps for overseas service would be physically fit as a unit, circumstances arise by which incapacitated at times filter through to this, as well as other embarkation camps.

The responsibility for detecting the unfit rests upon the surgeons detailed for that work, and in order to be successful, they should be proficient, well-trained, and acutely observing. It would be ludicrous for a surgeon to say that a man with a simple goitre, otherwise in good physical condition, was unfit for overseas service; also to allow malingering to be imposed.

This paper deals with conditions found to be of a surgical nature, and found during daily inspection of squadron and detachment personnel by the surgeons in charge, then passed on to a board of officers finally to determine as to the fitness of the men. Good results have shown, in that but one case of frank disease was turned back from the port of embarkation out of a

group of about forty thousand sent away; and such favorable results can be obtained only through the unifying factors of system.

When troops arrive at this depot, they are immediately inspected by the epidemiologist, after a certification as to infectious and venereal diseases has been made by the surgeon in charge. All infectious diseases are immediately sent to hospital, and isolated in respective wards; venereal diseases are sent to the genito-urinary wards. Physical defects are noted—whether medical or surgical, and are listed for further reference. Such tabulation results in no confusion or difficulty in eliminating the physically unfit for overseas service.

When a man is found by the board of examiners to be unfit for overseas service, a distinction is made as to whether he is temporarily or permanently so; if temporarily so, he is sent to the hospital for medical or surgical treatment, as the case may be; if he is permanently so, he is finally transferred to the casual ineligibles (ineligible for overseas service.) Those discharged from the hospital after receiving medical or surgical treatment, are transferred to the casuals convalescent, with a recommendation as to whether they are to be turned over to the casual eligibles or casual ineligibles. Men in the casual ineligibles are brought before a board of officers to determine whether they are fit for limited domestic service or unfit for any form of military service; in the former instance, they are transferred to the development battalion.

Physical unfitness are of three classes: (a) those temporarily unfit; (b) those partly unfit for military service; (c) those wholly unfit for any form of service. Class A consists of correctable medical and surgical incapacities, such as, second degree flat feet, hernia, chronic appendicitis, etc.; Class B includes arthropathies (ankylosis, short limbs, chronic arthritis), contractures, and similar incapacities; Class C furnishes the mental defectives, acute and chronic tuberculosis, chronic cardiac (poorly compensated), nephritis, and other defects, rendering the possessor unable to perform even limited service.

Among seven thousand and three hundred enlisted personnel examined, the most frequent surgical condition found was chronic hypertrophic tonsillitis, being operable in one hundred and seventy-six cases; varicocele, second and

third degree, was found present in one hundred and sixteen cases; and operated on only when symptoms were distinctly manifest; operable hernia was discovered in sixty-six instances, all but one of which was of inguinal type; hemorrhoids were found operable in twenty-four cases; undescended testes were discovered nine times; hydrocele five. One hundred and ninety-nine cases of flat feet were discovered, seventy-three being of second degree; cases of third degree flat were found in most instances unfit for full military service.

The examination of officers for overseas service is done at this hospital by a board of officers appointed for the purpose. While most of the officers coming to this depot have been in service long enough to have been examined many times, yet now and then an officer is disqualified for service, temporarily or permanently, on account of some physical defect.

All must present records of having received complete typhoid and paratyphoid immunization, also vaccination against smallpox; and recently the entire command—officers and enlisted men—have been vaccinated against influenza and pneumonia infection, the same being recorded on certificate of fitness for overseas service. Among eight hundred and thirty-six officers examined, hernia was found to be the most common surgical condition and found operable in nine instances; hydrocele was found five times; one rectal fistula; one nephrolithiasis; one single kidney (nephrectomy); and one chronic appendicitis. The officers having the single kidney and nephrolithiasis were found permanently unfit for overseas service, but fit for domestic military service.

By correcting incapacities requiring surgical intervention, officers and enlisted men were made better fit to fight and less likely to become hospital patients overseas. And there is no doubt that chronically hypertrophied tonsils, subject to acute exacerbations, are better removed than allowed to remain, for one such case might not only be a hospital charge a good percentage of the time, but serve as a carrier of acute infection, such as Vincent's angina, cerebro-spinal meningitis, diphtheria, scarlet fever, measles, etc. Removing sources of infection among the enlisted personnel of the army certainly should include chronically infected tonsils among the most frequent causes of disease dissemination.

Marked decrease in the number of cases of acute tonsillitis was noticed among squadron personnel, not considering those that had their tonsils removed other than as potential carriers. It was observed that men most subject to acute attacks of tonsillitis were those that contracted scarlet fever and diphtheria as a rule. One squadron having had an outbreak of diphtheria showed five carriers of the diphtheria bacillus, and when they were removed and isolated there were no new cases; the three cases of diphtheria might have had their origin from one of the carriers. In the same squadron there were eleven cases of chronically enlarged tonsils, among which three cases of scarlet fever developed; removal of the tonsils of the remaining eight not only cured their tonsillitis, but lessened the danger of disease dissemination to the rest of the command.

Correcting surgical incapacities, apt to render the possessor a hospital charge overseas, is a procedure not to be neglected at military camps, for efficiency reasons; and, conversely, one should not operate on minor physical incapacities that are better left alone.

Forming a huge army from the nation's manpower rendered it necessary not only to train the men in the art of warfare, but also made it obligatory upon the medical department of the army to correct physical faults when possible, so as to make the possessor fit to fight; and the great benefit derived from conservative corrective surgery will be more apparent after the war in the absence of such minor incapacities in those that possessed them.

OBSERVATIONS IN THE PNEUMOTHORAX TREATMENT OF PULMONARY TUBERCULOSIS.

BY HERBERT F. GAMMONS, M.D., CARLSBAD, TEXAS.

THE remarkable immediate benefits resulting from the use of pneumothorax are so encouraging to both patient and physician, that undoubtedly the main object of the treatment is not obtained in many instances.

Our good judgment is often overbalanced by our enthusiasm with the result that we go to the extremes when we consider these immediate benefits and fail to consider the ultimate results.

Such is the case with many of the treatments for pulmonary tuberculosis, especially the tuberculin and rest treatments. There are some cases of pulmonary tuberculosis which are benefited by tuberculin treatment and by prolonged rest. There are other cases in which tuberculin and prolonged rest are not indicated. To treat a case of pulmonary tuberculosis with any special treatment, regardless of indications or contraindications, is to mistreat the case.

The going to extremes by physicians in the treatment of pulmonary tuberculosis is oftentimes the result of reading glowing accounts of successes resulting from such a special treatment.

In treating pulmonary tuberculosis we fail to take into consideration many factors which enter into the cases in question. We fail to consider that each case is a case unto itself as regards its resistance and the virulence of the infecting organisms.

Furthermore, we fail to consider the probable future life of the patient, his opportunities for taking treatment for an extended length of time, and his ability to cooperate with the physician in all details of both special treatment and the regular sanatorium or hygienic treatment.

When we consider the advisability of treating tuberculous patients by artificial pneumothorax, excepting hemorrhage and last resort cases, we must attempt to determine what the future of the case in question will be. That is to say, in a sanatorium where patients have a limited length of time in which to take treatment, we must ascertain whether or not the patient will continue the treatment for the necessary length of time to get anatomic healing.

Also, we must decide if a patient, after leaving a sanatorium, will be able to continue treatment under the supervision of a physician competent to determine, at the earliest possible moment, increased activity in the opposite lung.

At the same time the age of the patient and the presence of disease of other organs must be taken into consideration. The young and old patients are usually not good subjects for induced pneumothorax treatment.

Very nervous patients should also be excluded unless the nervousness is of toxic origin. Patients with marked cardio-renal vascular disease prove to be poor risks.

Even after we have excluded all of the above

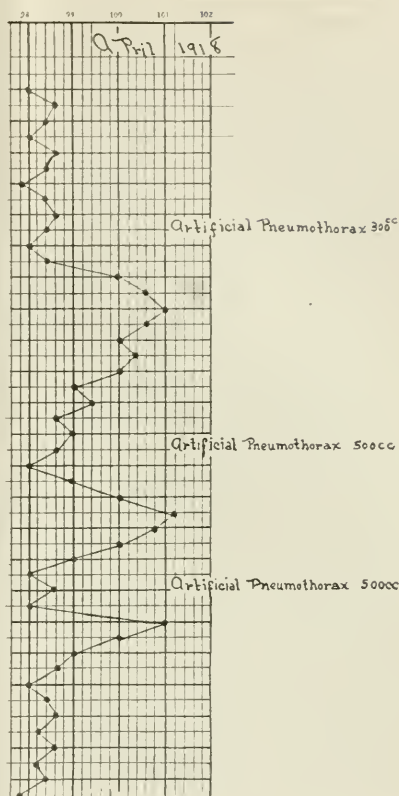


FIG. 1.

considerations we must still take into consideration the complications of pneumothorax treatment, such as embolism, pleural shock, pleural effusion and hemorrhage.

Often we will pick out a case which promises results, but after pneumothorax is administered we get symptoms of "walling in" of discharging cavities. Such is the case in Figure 1. This patient gave promise of being a splendid case for the pneumothorax treatment, but following instillation of air, the temperature was elevated, cough and sputum stopped, and general poisoning was marked. This case apparently had a cavity which was normally discharging freely, but following partial collapse, the opening to the cavity was closed with a result that the broken down tissue and pus were absorbed. After the air was absorbed and the patient began to expectorate, all signs disappeared until

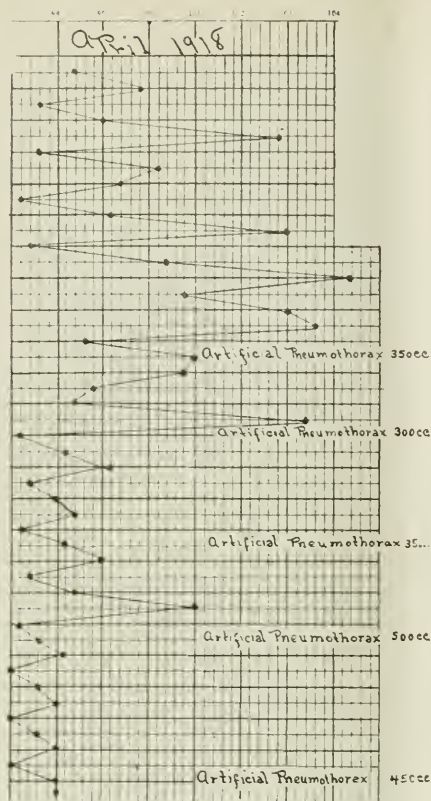


FIG. 2.

another treatment, when there was a repetition of the phenomenon.

On the other hand, Figure 2 shows the drop in temperature following pneumothorax in a patient with tuberculous pneumonia whom we did not expect to live.

The treatment of left-sided cases is not as hopeful as that of the right-sided. In most every left-sided case I have had marked displacement of the heart, and in a great many instances vomiting was very frequent, being apparently due to the pressure on the stomach. In a few instances left-side cases have severe headache.

I have found that pleural effusion occurs in about twenty per cent. of the cases treated by artificial pneumothorax. In many instances this effusion becomes purulent.

In a previous paper* I described an improved method of refilling cases treated by artificial pneumothorax. This consisted of the use of a ten gauge one and one-half inch steel needle through which the solution was passed to anesthetize the tissues in the intercostal space. After passing the needle through the tissues and gradually infiltrating them with the cocaine, the pleural space was reached and I did not withdraw the needle, but I removed the syringe and then attached the rubber tube, from the pneumothorax apparatus, to the needle in position. In this way I limited the number of entrances to the pleural cavity to one, thereby decreasing shock, pain, hemorrhage, and infection.

For some time I have been using the same method on the initial puncture cases and it is much more agreeable than the old method. While using the older method I accidentally punctured an artery, which was apparently located in a caseous area, with resulting death from internal and external hemorrhage. This occurred in a hopelessly far advanced case, but the shock to me was as severe as if it had been in a very hopeful case. I feel this accident would not have occurred had I used the small needle herein described.

It is not the purpose of this paper to go into detailed statistics, which would be meaningless to those not familiar with the cases in question, and I will mention that the material which formed the basis for my observations consisted of ninety-eight patients, in whom over two thousand entrances into the chest were made. Sixty per cent. of these cases were left-sided cases. Many have left my supervision and I do not know the present condition of them. The treatment that they have been taking would influence their present condition, naturally.

None of these cases have been absolutely cured. Many have been greatly benefited. A few are probably worse off than they would have been without the treatment, on account of the pleural effusion which has become infected. About thirty per cent. have died, although this does not mean that they were not properly selected, as a few of these cases who died would not care for themselves.

My observations have led me to the following conclusions:

First—Consider the possibility of using arti-

*Improved Method of Refilling Cases Treated by Artificial Pneumothorax. *Jour. A. M. A.*, March 23, 1918, p. 843.

ficial pneumothorax in every case of pulmonary tuberculosis.

Second—Use every hygienic method first and then if the chance of improvement following pneumothorax appears good, use it.

Third—Artificial pneumothorax should not be used as a last resort, as a rule.

Fourth—After the pneumothorax is started and there are good prospects of a complete collapse, the treatments should be administered often. It is best to give 300 cc. at the initial attempt and then it should be given every two or three days until the lung is collapsed. The amount to be given at each operation being dependent upon the manometric reading.

Fifth—If, after a few attempts, numerous adhesions are present preventing a complete collapse, the case should be given up as a failure.

Sixth—The ulcerative case offers the best results. Unilateral cases without much sputum and fever should not be treated with pneumothorax, even though their entire lung is full of large, moist râles. The collapse would in these cases tend to tear up the fibrosed areas.



FAT EMBOLISM SHOCK IS NOT EXPLAINED BY EMBOLISM OF THE LUNGS.

By W. T. PORTER, M.D., BOSTON.

[From the Laboratory of Comparative Physiology in the Harvard Medical School.]

IN February, 1917, I demonstrated that the fall of arterial pressure and the other symptoms of wound shock can be produced by the injection of neutral olive oil into the external jugular vein.¹

In May and June of that year, I confirmed, by observations at the Massif de Moronvillers and the Chemin des Dames, the statement made to me at the Carrel Hospital in Compiègne, namely, that shock is most frequent after shell fracture of the femur and after multiple wounds through the subcutaneous fat²—conditions in which much fat enters the blood, with resultant infarction of the lungs, the brain, and other organs.

These facts led me to declare that fat embolism is the most frequent cause of wound shock upon the battlefield.

Shortly thereafter, several physiologists and many surgeons denied that fat embolism could properly be said to be a cause of wound shock. My results were to be explained, they contended, by embolism of the lungs. This contention was completely overthrown in July, 1918, when shock was produced by the infarction of the vasomotor region through the injection of a minute quantity of oil (0.1 c.c. per kilo) into the central end of the vertebral artery. Vessels of the vasomotor region were seen to be plugged with oil in sections stained with sharlach R.³

II.

It has seemed worth while to prove by two other methods that fat embolism shock cannot be explained by embolism of the lungs.

The first of these methods produces shock by injections through the central end of the carotid artery. This may excite surprise. Not long ago an experimenter of repute strengthened, as he thought, the case for embolism of the lungs by failing to produce shock by the injection of oil into the central end of the carotid artery. His failure to lower the blood pressure by embolism of the brain seemed to him to leave the field clear for embolism of the lungs.

The unsuccessful experimenter could hardly have forgotten that the vasomotor region is supplied by the basilar artery and not by the carotid. Probably he reasoned that the circle of Willis is an open road through which oil injected into the central end of the carotid would easily reach the nerve centers in the bulb. If he is of that mind, he has fallen into the pit which the anatomists have dug. That the circle of Willis is a generous anastomosis cannot be disputed. But the direction taken by a drop of oil entering this circle will not finally depend on the anatomical relations. The vascular pressure is the warder of these gates. The circle of Willis is a balanced pressure ring, in which the pressure from the basilar area contends with that from each carotid area. So clear is this, that experiments would seem superfluous, were it not for the peril inherent in a priori reasoning. But the experiments are not less clear.

If 1 c.c. of neutral olive oil is injected into the central end of one carotid in a cat weighing 4 or 5 kilos (both vertebrals and the other carotid artery being free), shock rarely follows. Obviously, the oil enters parts of the brain anterior to the bulb and does not plug the vessels

in the vasomotor region. If, on the contrary, a clamp be placed temporarily (4 minutes) on one carotid while the oil is passing through the other carotid, shock usually does follow.

Like the injection of oil into the vertebral artery, this experiment is doubly destructive against the hypothesis that shock is due to embolism of the lungs; for it leaves the lungs free and produces shock by the embolism of a particular region of the brain.

III.

The second of the two new methods compares two procedures, A and B, in each of which 0.5 c.c. of neutral olive oil per kilo of body weight is injected into the external jugular vein of cats. The rate of inflow is about 1 c.c. in 15 seconds.

In series A, both carotid arteries were closed but both vertebral arteries were free. Shock usually took place.

In series B, both carotid arteries were free but both vertebral arteries were closed. Shock seldom took place.

Yet the lungs were infarcted equally in both series. In fact, the method in series A was identical with that in series B, except that in A the fat passing through the lungs into the general circulation could reach the brain through the vertebral arteries, whereas in B it could enter the brain only through the carotid arteries. Obviously, the state of the lungs being identical in both series, the difference in the result of the two series must be due to a factor outside the lungs. The experiments point clearly to embolism of the vasomotor region as the cause of the shock observed in series A, in which the vertebral arteries were open.

IV.

The three methods detailed above lead to the same conclusion.⁴ Fat embolism shock is not explained by embolism of the lungs.

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- ² BOSTON MEDICAL AND SURGICAL JOURNAL, Sept. 6, 1917, clxxvii, p. 326.
- ³ BOSTON MEDICAL AND SURGICAL JOURNAL, Aug. 22, 1918, clxxix, p. 273.
- ⁴ Following is a complete list of the papers in this series: BOSTON MEDICAL AND SURGICAL JOURNAL, 1916, Vol. clxxv, pp. 254-255; 1917, Vol. clxxvi, p. 248; *Ibid.*, p. 659; 1917, Vol. clxxvii, pp. 326-328; 1918, Vol. clxxviii, pp. 657-660; Comptes rendus de l'Académie des Sciences, Paris, Oct. 30, 1916, t. 163, p. 492; *Ibid.*, July 23, 1917, t. 165, p. 164; Proceedings of The Institute of Medicine of Chicago, 1918, Vol. II, pp. 24-29; BOSTON MEDICAL AND SURGICAL JOURNAL, 1918, Vol. clxxix, pp. 273, 274.

Society Report.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF WEDNESDAY, JANUARY 1, 1919, AT 8 P.M.

The President, Colonel Richard H. Harte, in the Chair.

RECONSTRUCTION PROGRAM OF THE PUBLIC HEALTH SERVICE.

SENIOR SURGEON CHARLES E. BANKS, U.S.P. H.S., Washington, D. C.: Whoever writes the history of the present war will find among the most significant of its developments the achievements of our profession in the field of preventive medicine: in the huge army of nearly five millions mobilized in the United States there have been less than 200 cases of typhoid fever. One may safely say that as a result of the remarkable work in sanitation and preventive medicine carried on by the allied medical organizations, hundreds and thousands of fighting men were preserved from ignominious death from preventable disease. That which has been accomplished in the military zone under the most unfavorable environments can be duplicated in civil life under less complicated conditions. The men whose lives were saved by the application of modern sanitary methods and the principles of preventive medicine understand the necessity for the application of sound sanitary principles to the ordinary daily walks of life. They will not only practice these principles themselves, but demand that those in authority in health matters shall apply them in the interest of the public health. The superficial work which has characterized a good deal of our health activities in the past will be tolerated no longer. The medical profession must be prepared for a reconstruction of methods in connection with the public health. The saner logic of preventive medicine will supersede the ancient order of attempting to cure disease that has become established. The leadership in this period of reconstruction will naturally devolve upon the United States Public Health Service. The program with which this natural organization intends to meet the emergencies of the situation is comprehensive and far-reaching, and for its full success is dependent upon the coöperation of organized medicine. It meets urgent national needs by outlining health activities which are

practicable and which will yield the maximum result in protecting national health and will diminish the toll of thousands of lives sacrificed by preventable disease and unsanitary conditions. The program comprises exhaustive work under industrial hygiene, rural hygiene, prevention of the diseases of infancy and childhood, water supplies (National development of safe water supplies), milk supplies (National development of safe milk supplies), sewage disposal, malaria (National development of measures for control), venereal diseases, tuberculosis, railway sanitation, municipal sanitation, health standards, health education, collection of morbidity reports, organization, and training for duty in emergency of the Reserve of the Public Health Service.

If this great world war found us unprepared, let not the same be said of us in this period of reconstruction.

DR. J. M. ANDERS: Public health activities have suffered greatly during the war, and this is perhaps especially true of civilian tuberculosis activities for the reason that many able workers were in the Army and Navy. Perhaps the most important of the lessons we have learned in the recent world war is the fact that the individual efficiency of the men on the firing line is the foremost factor in modern warfare. The large percentage of rejections, by the local draft boards, of the men called to the colors directs especial attention to the problem of physical education in this country during this reconstruction period. Every individual, it seems to me, should be taught how to promote his or her health, and I believe this could be best accomplished in connection with our public and secondary schools as well as in the colleges and universities. While the idea of universal military training should be encouraged, the scope of the plan should be, and the one presented tonight is, sufficiently comprehensive to include the entire American race. I believe that if in the immediate future sufficient attention were devoted to the matter of physical education, many of the details in the program just outlined by Colonel Banks would in due course be found to be unnecessary. All are probably aware of the fact that in England there has recently been formed a ministry of health which will combine and coordinate all the public health activities under one head. Such a reorganization of the public health activities in this country would be a consummation devoutly

to be wished for, and it would certainly facilitate that which Colonel Banks has emphasized, namely: the necessity of sympathetic coöperation among all allied agencies having to do with public health work. Moreover, I feel strongly that there could be no more propitious time than the present to set in motion efforts to this end.

Book Review.

The Doctor in War. By WOODS HUTCHINSON, M.D. Boston and New York: Houghton, Mifflin Company. The Riverside Press, Cambridge. 1918.

From first-hand information gathered during a year's visit with the medical and sanitary service on the western front, through the courtesy of the allied governments, Dr. Woods Hutchinson has proved to us in his latest book that "the doctor has made this world-struggle probably one of the least deadly ever fought in proportion to the numbers engaged."

Aside from its very great interest to the medical profession as an authoritative statement of the marvelous progress of medical science in the war, this book is also an inspiration to the general reader. Optimism and cheer are the messages which every chapter contains; and though no effort has been made to lessen the actual facts, the author shows that the number of fatalities is surprisingly fewer than is generally supposed. This interesting account of Dr. Hutchinson's observations is divided into twenty-five chapters and is profusely illustrated from official photographs which aid in clarifying many of the descriptions. Within the pages of this volume is a vivid, adequate account of the contribution of the medical profession to the cause of humanity. In a non-technical manner and one which will appeal to every American as a story of historical interest, the author has presented his observations of the dangers of war: repairing the wreckage of war; the superb health of the armies; the land of the happy warrior and the cheerful wounded; the risks of a Red Cross nurse; a day in a field hospital; treating a million men and the new diseases in war. It is a book which should be read by everyone, regardless of any direct interest which he may have in medicine.

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THURSDAY, MAY 8, 1919

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

LETHARGIC ENCEPHALITIS.

A REPRINT describing the disease known as "lethargic encephalitis" has been issued recently by the Public Health Service. This disease has been made notifiable in England, and it is desirable that it should be determined to what extent it prevails in this country. At a meeting of the Vienna Psychiatric Society in 1917, a group of cases which had occurred in epidemic form were described, under the name "lethargic encephalitis," by Von Economo. The disease was discussed also at a meeting of the Paris Academy of Medicine, and evidence was brought forward which indicated its prevalence in Germany in the late seventeenth and early eighteenth centuries, in Upper Italy and Hungary in 1890, in Europe and the United States in 1895, and in Vienna in the winter of 1916-1917. There was an epidemic in England in 1918, and clinical and pathological investigations have been undertaken by the Government and by the Medical Research Committee.

The data collected in the course of these investigations have been published, and indicate that the disease is an acute affection due to a specific virus, probably finding entrance through the nasopharynx, and having a special affinity for the nervous system. Pathologically, lethargic encephalitis belongs to the class of polioencephalitic diseases which are inflammatory in nature. It has been noted that clinically the disease is a general infectious disease characterized by manifestations originating in the central nervous system, of which the most frequent and characteristic are progressive lethargy or stupor and lesion in or about the nuclei of the third pair of cranial nerves. In most cases, a prodromal period may be recognized. Usually the first symptom is simple catarrhal conjunctivitis and sometimes tonsillitis, sore throat, and bronchial catarrh; but the salient system in most cases has been progressive lethargy. There is great muscular weakness manifested, delirium is not uncommon, and irregular nonrhythmic spontaneous movements of the face, trunk, and limbs are not infrequent. Ophthalmoplegia is perhaps the most common localizing sign. Seven types of cases have been recognized: (a) A clinical affection of the third pair of nerves; (b) affections of the brain stem and bulb; (c) affections of the long tracts; (d) the ataxic type; (e) affections of the cerebral cortex; (f) cases with evidence of spinal cord involvement, and (g) the polyneuritic type in which affection of the peripheral nerves is suspected.

The most common diagnostic error is to attribute the condition to tuberculous meningitis. Lethargic encephalitis has a very definite clinical syndrome, characterized by progressive stupor or coma, alternating delirium, headache, giddiness, asthenia, mental and emotional changes, and, in the majority of cases, by paralysis of the third pair of cranial nerves. No specific method of treatment has as yet been devised. In many cases, transient or permanent relief has been obtained by the withdrawal of cerebrospinal fluid by lumbar puncture. It has been observed that convalescence requires at least six months after the beginning of the illness.

The publication of these reprints is of great value in calling to the attention of the profession the salient facts concerning a disease about which very little is known.

INVESTIGATION OF SICKNESS EXPECTANCY.

It is of the greatest possible interest to read the report of an extensive investigation of sickness expectancy conducted by the United States Health Service under the direction of Assistant Surgeon General B. S. Warren and Associate Statistician Edgar Sydenstricker and published in public health reports. These investigators collected detailed information from over 400 sick-benefit associations, covering, in the majority of instances, an experience of three years. This information included the records of disability due to sickness and non-industrial accidents for which cash benefits were paid under the various regulations of the associations, and gives a fair insight into the sickness experience of over three-quarters of a million wage-earners engaged in many different industries and occupations.

Inasmuch as most of the plans for State health insurance provide that no benefits be paid for the first three days of illness, or for illness of less than four days' duration, special study was made of the experience of 22 sick benefit associations which enforce a similar limitation. These represented about 150,000 members, for a great majority of whom three years' experience (1914, 1915, and 1916) was available. This is equivalent to 465,714 years of exposure. With a total number of slightly over four million days of sickness, this group showed 8.6 days of sickness per member per year.

Attention is called to the influence of the length of the period for which the respective associations pay sick benefits. Among those where benefits were paid for 52 weeks or over, the rate was 8.8 days of sickness per member. Among those where the benefit period was not over 26 weeks the rate was approximately 6 days of sickness per member. It is of interest to note that these figures do not vary greatly from estimates made by other investigators in this field.

Summarizing the results of their investigations the authors state that, "probably a conservative estimate of the total amount of sickness which will require medical service under the proposed health-insurance measures would be something between 8 and 9 days per insured person. This includes, of course, the first 3 days of sickness and sicknesses lasting less

than 4 days for which medical service must be provided. With sickness expectancy of 9 days per insured person per year, the physician with 1,000 insured persons on his list might expect to have 20 to 40 of these constantly sick. That would mean making some 20 to 40 professional visits a day, though a certain proportion will be office visits. This estimate applies only to insured persons; if the families are to be included in the medical benefits and if the average family consists of wage earner, wife and child, the amount of medical work would be increased at least 200 per cent., for it may be safely estimated that the sickness expectancy in the family is at least twice as great as for insured persons."

TYPHOID FEVER.

A PUBLIC Health Report of recent issue contains several important articles relating to typhoid fever. Attention is called to the fact that a large proportion of the public water supplies in this country are sources of water-borne disease. An epidemic of typhoid fever in Herkimer, New York, is an illustration of an outbreak of the disease due to polluted water. In this instance, disastrous results followed the failure, through lack of expert supervision, to chlorinate a seriously contaminated water supply. The measures taken by the State Department of Health in controlling the epidemic are instructive.

The outbreak was first noted in September, 1918, and between that date and January 1, 1919, one hundred and fifty-five cases of typhoid fever, and twenty-eight deaths, were reported from Herkimer. In October, an epidemiological investigation was started, and information secured showed that the infection was due to the public water supply. Steps, under expert supervision, were then taken to chlorinate the water. At the present time, it appears that the outbreak has been definitely checked.

This report points out the necessity of maintaining the highest possible standards of sanitation and hygiene, in spite of the protective value of antityphoid vaccination. The incidence during the last five months of fevers of the typhoid-paratyphoid group among members of the American Expeditionary Forces em-

phasizes the fact that typhoid vaccination should not be considered a substitute for sanitary precautions. It is probable that the high standards of sanitation and personal hygiene established by the Medical Department for the last ten or fifteen years have not been wholly maintained during the last year and a half. This condition may be attributed to the lack of facilities and materials, transportation difficulties, and insufficient training and personnel. From June 1, 1917, to June 1, 1918, there were but few cases reported. During the Chateau-Thierry offensive, and after the St. Mihiel and Argonne offensives, the disease prevailed to some extent among our troops. It is important that reports of cases and suspected cases should be sent immediately to the medical officers of organizations in order to recognize the disease in its incipient stages and prevent its spread. This report contains an outline of a procedure which has been adopted in order that reports of typhoid and paratyphoid may be transmitted promptly, and enumerates briefly the usual clinical manifestations of these fevers, atypical modes of onset, differential diagnosis, and modifications of the usual clinical manifestations in vaccinated individuals.

WAR NEUROSES.

AN article of unusual interest, considering with intelligence and insight the condition of war neuroses, has appeared recently in the *Atlantic Monthly*. The author, Frederick W. Parsons, remarks that we have all heard stories, especially at the beginning of the war, of the queer behavior manifested by men who have been exposed to particularly violent bombardment; the term "shell shock" became popular, and was soon applied to almost any unusual mental or nervous condition. This article considers the psychological aspects of the development of war neuroses, pointing out that the symptoms of war neuroses are not essentially different from peace-time neuroses, although they may assume slightly different forms because of the environment of war. The psychological principles of Freud are believed to be important in the production of peace-time neurosis; the individual, unable to adjust himself to a difficult situation, escapes by an unconscious avenue.

In war neurosis also, the results of a true neu-

rosis are never conscious and voluntary. Although the causes of war neuroses are many, the foundation of the condition may be traced usually to a difficult situation, whether it be lack of courage, association with uncongenial natures, a sense of injustice, or brooding over real or fancied wrongs. This internal mental conflict, added to poor sleeping, exposure, perhaps hunger, and the explosion of a shell near by, often result in a state of unconsciousness, sometimes followed by blindness, deafness, and loss of voluntary control over the motions. It is a mistake, however, to attribute these conditions to the shell explosion alone. They are the outcome of maladjustment in war as in peace.

The author of this article depicts also the attitude of the psychoneurotic individual who enjoys his neurosis greatly more than the life which caused it, and therefore clings to his symptoms. Either an over-sympathetic attitude or neglect may end in making permanent invalidism a result of what should be only a passing phase. An intelligent and sympathetic understanding on the part of the public will greatly benefit men who are returning to this country suffering from war neuroses.

AWARD OF DISTINGUISHED SERVICE MEDAL TO BOSTON PHYSICIAN.

INFORMATION has recently been received that the Distinguished Service Medal has been awarded by the United States Government to Colonel Joel E. Goldthwait of Boston. The order making this award reads as follows:

1. Under the provisions of cablegram number 2830 received from the War Department March 1, 1919, the Commander-in-Chief, in the name of the President, has awarded the Distinguished Service Medal to you for exceptionally meritorious and distinguished service as set forth below:

COL. JOEL E. GOLDTHWAIT, U. S. A.

For exceptionally meritorious and distinguished services.

As a member of the Medical Corps, he has, by his unusual foresight and organizing ability, made it possible to reclaim for duty thousands of men suffering from physical defects. He has thereby materially conserved for combat service a great number of men who would have been lost to the service.

This award is richly deserved, and is not only a great honor to the recipient, but reflects credit also on the Boston profession.

NOMINATION OF DR. BRADFORD.

In a previous editorial notice in regard to the candidacy of Dr. Bradford as member of the Board of Overseers of Harvard University, two errors were made. First, it should be noted that it is Dr. F. C. Shattuck, and not Dr. G. B. Shattuck, who has just completed his service on the Board of Overseers. In the second place, the profession will be represented next year, even if Dr. Bradford should not be elected, by Dr. W. S. Thayer of Baltimore. Dr. Thayer is a worthy representative of the profession, but in the nature of things, living at a distance, he cannot be in as close touch with the Medical School as one who is nearer to its activities. The importance of Dr. Bradford's candidacy, therefore, is as we have previously stated.

MEDICAL NOTES.

CULTIVATION OF MEDICINAL PLANTS IN FRANCE.—The *British Medical Journal* calls attention to the fact that the cultivation of medicinal plants, which was formerly a very active industry in France, has rapidly fallen off in the last half century. Before the war, the value of the imports of medicinal plants, mainly from Germany and Austria-Hungary, was estimated at tens of millions of francs. The Minister has, therefore, set up a committee for the purpose of organizing and intensifying the cultivation, gathering, and preparation of medicinal plants.

RESULTS OF FOOD SHORTAGE IN GERMANY.—In commenting on the shortage of food in Germany, the *British Medical Journal* states that at a meeting of medical societies in Berlin on December 18, 1918, Professor Rübner said that the danger was at first under-estimated, and implied that the effects of insufficient food were most marked in children. This agrees with information that comes to us from medical officers who have returned from the occupied territories. It appears to be established that cases of "war oedema," or "hunger oedema," common among prisoners of war in Germany, have also occurred among the civil population. It is a condition without fever, the main features being oedema and asthenia, sometimes preceded by diarrhea and mucous colitis. The oedema involves principally the lower extremities and

can be cured by rest in bed and by giving at least 100 grams of fat a day.

EUROPEAN RELIEF FUNDS.—On April 7, the totals of the principal New England European Relief Funds reached the following amounts:

French Wounded Fund	.....\$535,523.08
French Orphanage Fund	..... 492,650.12
Italian Fund	..... 285,407.38

HONOR FOR CAPTAIN W. E. MCGINLEY.—Captain W. E. McGinley of the Medical Corps, A. E. F., was decorated on April 3 with the Military Cross by King George, at Buckingham Palace.

EPIDEMICS IN POLAND.—A recent report from Warsaw states that disease is prevalent throughout eastern and southeastern Poland. Thousands of the population are dying from epidemics of typhus, smallpox, and trachoma, and it is reported that whole towns have been practically wiped out by these diseases. In four years the population of Pinsk has been reduced from 50,000 to 25,000, and of the latter, 500 are down with typhus, lack of medical attendance, and proper nursing care. The disease and hunger were found in every house visited. An inspection of the orphan asylum disclosed 60 children afflicted with typhus.

TYPHUS IN BADEN.—A recent report from Berlin indicates that there is a severe epidemic of typhus at Pforzheim, Baden, and that thousands are succumbing to the disease. The epidemic is attributed to bad water.

HOSPITAL CARE FOR MEN DISCHARGED FROM SERVICE.—The work of the Public Health Service has been extended by the enactment by Congress of a law entrusting to the Public Health Service the medical, surgical, and sanatorium care of discharged sick and disabled soldiers, sailors, and marines. A large proportion of the 24,500 soldiers, sailors, and marines discharged from active military and naval service because of tuberculosis, and approximately 50,000 suffering from psychoneuroses, epilepsy, and other nervous and mental disorders will have to be provided with hospital and sanatorium care. For this work, Congress has appropriated over \$10,000,000.

CASUALTIES IN THE PROFESSION IN GERMANY.—Figures cited in the *Nederlandsch Tijdschrift* indicate the casualties in the medical profession

in Germany. Twelve hundred casualty lists published by the German Army and Navy contained the names of 1,158 surgeons reported as slightly wounded, 332 severely wounded, 663 killed, 422 dead from disease, 212 taken prisoner, 72 missing, and 1 killed by gas.

SMALLPOX IN ITALY.—A recent report from Berne states that for seven weeks there has been a smallpox epidemic in the Province of Apulia, Italy. Thousands of the poorer classes in the provinces have died, and 1,500 in the city of Bari alone.

GUM OPIUM PRICES.—It has been reported that a reduction of \$4.50 has been made in the price of gum opium, which is now being offered at \$18 a pound. About 200 cases of opium are now on the way from Turkey, and it is generally believed that the prices of codeine and of some of the other narcotic drugs used in the treatment of influenza will be lowered. Another reduction of seven cents a pound in the price of acetanilid to 42 cents a pound, which is equal to a 15 per cent. reduction on the selling price, is announced by manufacturers.

STATISTICS OF INFLUENZA EPIDEMIC.—Statistics of the recent influenza epidemic in hospitals and other institutions have been or will be systematically collected, analyzed, and published. In order to get, however, an accurate total picture of this important outbreak of disease, it seems desirable and necessary also to collect similar statistics from the private practice of physicians in Massachusetts, since the clinical aspect of the epidemic presented different and distinctive features under private and institutional conditions. For this purpose the JOURNAL urges all physicians to send to its office briefly tabulated statistics of influenza cases from their private practice from September 1, 1918, to February 1, 1919. The JOURNAL will be glad to collect and collate these data, and will place them in the hands of one or more competent persons for compilation, study, and publication as a contribution to the comparative clinical knowledge of this important epidemic scourge.

PREVALENCE OF SMALLPOX.—A recent issue of the *British Medical Journal* has called attention through the writings of R. Bruce Low, to the incidence of smallpox in all parts of the world. This article states facts and figures relating to smallpox which are particularly opportune be-

cause of the present danger of an outbreak of the disease due to war conditions. After the Franco-German war in 1870, the disease, resulting in the death of half a million people, spread first among the belligerent nations and later throughout the whole of western and northern Europe. In 1917, smallpox was prevalent in central Europe, and at the present time it exists in Russia and other countries. Shipping is often the means of infection, a fact which makes the danger to this country a serious one. The results which may come from the neglect of vaccination and revaccination should be carefully considered. As many physicians best qualified to deal with an epidemic outbreak are engaged in military service, individual persons should assume more responsibility in this matter. The *British Medical Journal* points out that although smallpox has been prevalent in Germany, of one thousand consecutive cases examined to ascertain the age incidence, only one hundred and fifty were under the age of thirty years, and five hundred of the remaining eight hundred and fifty had attained the age of sixty years. The disease attacked those who were either unvaccinated, or had not been revaccinated within ten years.

CONTROL OF VENEREAL DISEASES.—The U. S. Public Health Service is putting forth the most strenuous efforts to lessen venereal disease, and is enlisting the assistance of all physicians and druggists. The various State Boards are co-operating most actively. The New York State Board of Health, for example, has established venereal clinics in the larger cities and towns and is conducting post-graduate courses in New York for the training of medical men to handle the work in these clinics.

In the belief that the syphilis situation could be handled better if treatment for the general public were made possible, the Metz Laboratories of New York are offering to the Government and to the institutions co-operating with the U. S. Public Health Service Salvarsan and Neosalvarsan, practically at cost. These same low prices have been extended to all state and municipal institutions treating the general public, so that there may be no further excuse why the poor should not get the benefit of the best methods in the treatment of syphilis.

DEPARTURE OF AMERICAN SURGEONS FOR FRANCE.—Dr. J. Chalmers Da Costa, chief surgeon to the Jefferson Hospital, and Samuel D.

Gross, professor of surgery in Jefferson Medical College, departed for France on the transport *George Washington* on April 12. Dr. Da Costa is a lieutenant-commander in the Navy, and orders for his departure were received from the Navy Department.

AMERICAN SOLDIERS IN BRITISH HOSPITALS.—During the year 1918, 47,862 American soldiers were treated in British hospitals. Of this number, about one-fifth were wounded or injured, the remainder ill. It has been reported that at the time of the signing of the armistice, 9310 Americans were being cared for in American hospitals in Great Britain. There were only two or three American Red Cross hospitals, which were being used for British troops, at the time the United States entered the war; since that time, however, the Red Cross has developed so rapidly that when large numbers of American forces began to need hospital attendance, there was ample provision for them, except at the time of the influenza epidemic, when it was necessary to send many Americans to British hospitals. The United States Army personnel engaged in American hospitals in Great Britain numbered about 3200, that of the American Red Cross about 400.

RED CROSS CONFERENCE AT CANNES.—The last meeting for the discussion of general subjects at the conference being held at Cannes in preparation for the convention of the Red Cross societies of the world at Geneva was held on April 5. At the next meetings, plans for establishing an international bureau of health will be discussed more specifically.

Sir Robert Philips of Edinburgh addressed the delegates on the subject of tuberculosis work in England, and is reported to have said that the work which has been accomplished in the last twenty-five years would be completed in as many months if such an organization as the one proposed by the Red Cross existed. Dr. Kabe-shima of Japan and Col. Sesar Baduel of the Italian Red Cross read reports which seemed to favor the Red Cross project.

APPOINTMENT OF DR. IVAN E. WALLIN.—Dr. Ivan E. Wallin has been appointed acting professor and head of the department of anatomy in the University of Colorado School of Medicine. Dr. Wallin was recently advanced to an associate professorship in the medical school of Marquette University.

APPOINTMENTS AT GLASGOW UNIVERSITY.—Three appointments have been made recently at Glasgow University: Dr. Thomas Walmsley, lecturer in anatomy, with special reference to embryology; Mr. A. McL. Watson, lecturer in physiology, with special reference to histology; Dr. John McL. Thompson, lecturer in botany, with special reference to plant morphology.

PHYSICAL DEFECTS IN SCHOOL CHILDREN.—Investigations which have been conducted by members of the executive committee of the national physical education service have led them to the belief that practically fifty per cent. of the twenty-five million boys and girls in this country of school age have physical defects and ailments which impede their normal development. This condition is attributed to a lack of proper physical education, and a broad program of State and Federal legislation for the required education has been advocated by the committee as a means of bringing the children to the proper standard.

AWARD OF HONORARY DEGREE.—The honorary degree of LL.D. of the University of Dublin has been awarded to Lieutenant General Sir Charles H. Burtchell, K.C.B., director-general of the British Army Medical Service in France. He has received also the honorary fellowship of the Royal College of Surgeons in Ireland.

HONOR FOR AMERICAN SURGEON.—In recognition of his services as Medecin Chef of Hôpital militaire 32 bis, Passy, France, during the year 1916, the French Government has named Major John W. Churchman, M.R.C., "Officier de l'Instruction Publique." Major Churchman is a professor of surgery at Yale University.

MONTEFIORE HOME AND HOSPITAL.—Medical Research, independent of the hospital laboratory work, will be promoted at Montefiore Home and Hospital, Gun Hill Road, New York City, by the use of the income of a fund which has been given to this institution. The selection of a director of research is being considered.

RESEARCH STUDENTSHIP IN PHYSIOLOGY.—The Michael Foster research studentship in physiology at the University of Cambridge will be increased by its founder, Dr. J. B. Hurry, from a hundred guineas to £200.

APPOINTMENT OF DR. EUGENE L. PORTER.—Dr. Eugene L. Porter has been appointed assistant professor of physiology at the Western Reserve University Medical School. He is now instructor in physiology in the University of Chicago.

WORK OF DR. FARRAND.—Dr. Ligings-ton Farrand, as director of the activities of the American Red Cross, will be enabled, through his past experience and with the support of this great organization, to coördinate more closely health agencies of this country, to promote public health work, and to make the campaign against preventable disease a stronger one. For ten years Dr. Farrand served as the Executive officer of the National Tuberculosis Association, and during the war he conducted antituberculosis work in France under the Rockefeller Foundation. The American Red Cross with its seventeen million members and fifteen thousand local chapters, under the leadership of Dr. Farrand, will be wisely guided in the execution of its far reaching health projects.

400,000 INFLUENZA DEATHS IN GERMANY.—Figures published in the *German Medical Journal* recently show that during the last eighteen months, influenza has caused 400,000 deaths in Germany.

BRITISH DEATH AND BIRTH RATES.—A recent report from London indicates that in the last quarter of 1918, the number of deaths in England exceeded the birth rate, for the first time in the history of civil registration in that country. Upon the publication of this report the War Office announced the release in one week of seven hundred physicians from the army.

The death rate has been greatly increased by influenza, the number of deaths from that cause being 98,998, or forty-one per cent. of the total deaths for the period. It is believed that lack of physicians for controlling the epidemic is the cause of the great number of deaths. At the beginning of April, although 1,750,000 men of the army had been demobilized, only 1500 out of 11,000 physicians had been released.

ARMY HEALTH CONDITIONS.—The report of the Surgeon General for the week ending April 4 indicates a continued decline in the prevalence of serious diseases among troops at home and abroad. The majority of the deaths resulted from pneumonia and tuberculosis. The

death rate from disease in the United States dropped from 7.9 per thousand per year to 7.5, and in the overseas forces from 7 to 5.

HONOR FOR AMERICAN NURSES.—Ten American Army nurses have been awarded the *Médaille de Honneur des Epidémies* by the French Government, according to word that has just reached national Red Cross headquarters. The presentation ceremony took place at A. R. C. Military Hospital No. 112, Autenil, in the presence of a distinguished gathering, twenty-three officers of the American Medical Corps and seven enlisted men of the Army receiving the decoration at the same time.

The nurses honored by France were: Bessie Mae Warwick, McDonald, Pa.; Rose A. Cassidy, Brandywine Summit, Pa.; Karen M. Lauridsen, Astoria, Oreg.; Agnes W. Reid, La Crosse, Wis.; Pearl Worley, East Greenville, O.; Edith L. Hadsall, New Rochelle, N. Y.; Lillian E. Radcliffe, Montreal, Can.; Esther V. Hasson, Washington, D. C.; Myrtle Brondel, address not given; Mary C. Cavin, address not given.

FIFTIETH ANNIVERSARY OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION.—The fiftieth anniversary of the American Medical Editors' Association will be held at Atlantic City, Marlborough-Blenheim Hotel, on June 9th and 10th. The Executive Committee is arranging a fitting program for the occasion, and it is expected that seventeen ex-presidents will be present at the meeting. There will be a banquet on Tuesday evening, June 10th.

INFLUENZA IN SWITZERLAND.—It has been officially reported from Switzerland that 700,000 out of that country's population of 4,000,000, have been affected by influenza. These figures represent 17.5 per cent. The situation in Switzerland has been similar to the conditions in England, in that two distinct waves, reaching their highest points in July and again in October, were noted. In July there were 53,698 cases of influenza, and in October there were 263,399 cases in Switzerland.

BOSTON AND MASSACHUSETTS.

FORSYTH DENTAL INFIRMARY.—The Forsyth Dental Infirmary is accomplishing inestimable hygienic service for the children of Boston and its vicinity. The purpose of the institution is

to instruct the rising generation not only in oral hygiene, but in general hygiene as well; to improve the nutrition of children and thereby benefit their physical and mental growth; to decrease their chances of contracting disease and enable them to resist it better if contracted. The further aim of this institution is to promote the dental profession, not only in research, but also in clinical work, by establishing a closer affiliation among members of the profession.

The fourth annual report records the activities of the Forsyth Dental Infirmary during the past year. The influenza epidemic interfered with the operation of the clinic, for it was necessary to close the Infirmary for a period of four weeks. A course which was conducted on the study and care of very young children, available to all registered dentists, has been found valuable by those who have taken advantage of it. A department of consultation and diagnosis has been established, in order that dentists may avail themselves of the advice of specialists and special diagnostic appliances connected with the Infirmary.

The Infirmary has adopted the policy of encouraging the attendance of very young children, with splendid results. In order to arouse interest among the children, a banner, "All Dental Work Completed," has been awarded by the Infirmary to the first, second, and third grades which have qualified; eighteen of these banners have been awarded. Approximately 1700 children were treated during the summer alone.

The Postgraduate School of Orthodontia has been closed during the past year because practically all who intended to take the course entered the service. The school will reopen in October. A special course in army dentistry was established for members of the Staff holding commissions in the Dental Reserve Corps. During the winter, under the auspices of the Educational Committee of the Massachusetts Dental Society, a special preparedness course, with an enrollment of about three hundred, was conducted. In order to cooperate with the Government, plans are being made for the re-education of wounded soldiers and sailors in the art of mechanical dentistry.

AWARD OF CROIX DE GUERRE TO CAMBRIDGE PHYSICIAN.—Lieutenant Abraham F. Thomas, a Cambridge physician, has been awarded the French Croix de Guerre. Dr. Thomas is at-

tached to Ambulance Company I, 2nd Division, now in Germany.

PREVALENCE OF SMALLPOX.—Another case of smallpox has been discovered in Boston, and the Board of Health urges all persons not recently vaccinated to be vaccinated at once. There are now three cases of the disease in the detention hospital. Smallpox has been unusually prevalent during the winter, especially in the middle West, and also in Canada. More than one hundred cases have been reported in Nova Scotia alone up to the first week of March. New England States have been relatively free from the disease, although during February fifty-six cases were reported in Maine, and during the week ending March 22, sixteen new cases were found in various parts of Massachusetts. The disease has shown itself in a very mild form, and so far has attacked only unvaccinated persons.

CLINICAL PROFESSORSHIP FOR DR. HUGH CABOT.—Dr. Hugh Cabot has been appointed clinical professor of genito-urinary surgery for the coming year at Harvard University.

Obituaries.

MISS JANE A. DELANO.

MISS JANE A. DELANO, who died April 15th, at Base Hospital No. 8, at Sauvigny, France, was one of the foremost figures of the nursing world. It was under her direction that more than 30,000 nurses were recruited through the American Red Cross for service with the Army and Navy after the United States entered the great conflict. She was born in Watkins, New York, in 1862. Her father was killed in the Civil War, and she was reared by her grandfather, a Baptist clergyman.

The call to relieve suffering humanity came to her while still a young girl, and after her preliminary education she began fitting herself for the career in which she was destined to attain such great prominence.

Miss Delano graduated from Bellevue Hospital, New York, in 1886, and two years later rendered her first patriotic service to her country by volunteering to nurse yellow fever victims in Jacksonville, Fla. Up to the time Miss Delano and a few other courageous trained nurses went to Jacksonville from New York, the fever patients had been cared for by some

negro nurses who, while willing and devoted, lacked the scientific skill necessary to combat successfully the dread malady.

Although at that time medical science had not decided that the mosquito was a yellow fever carrier, Miss Delano had reached that conclusion and had insisted on the use of mosquito netting by her nurses, with the most satisfactory results.

Her work in Jacksonville finished, Miss Delano was called to Bisbee, Ariz., in 1889, to establish a hospital for one of the big copper companies. Two years later she was made superintendent of the nurses' training school of the University of Pennsylvania, a position she held for five years. Special courses in philanthropy and medicine further increased her knowledge, and in 1900 she returned to Bellevue Hospital to direct the nurses' training school there, continuing in that capacity until 1905.

When the American Red Cross, following the reorganization in 1906, entered into an agreement with the American Nurses' Association for the purpose of developing a nursing reserve for the Army Nurses' Corps, Miss Delano was appointed chairman of the committee in charge of the work.

She was also named as superintendent of the Army Nurse Corps by the Surgeon-General, in which capacity she visited the Philippine Islands, China, Japan, and Hawaii. Due to her untiring effort, 8,000 carefully selected nurses were available for government service at the time the United States entered the war, and her leadership was largely responsible for the success of the nurses' recruiting campaign which followed.

Miss Delano served three times as president of the American Nurses' Association and also served several years as head of the directorate of the *American Journal of Nursing*.

She was a woman of striking personality and appearance. Regal in carriage, a mass of snow white hair crowning a strong, but kindly face, she was a commanding figure in any gathering. A gentle manner and sympathy that was boundless won for her a great circle of friends.

Miss Delano served the American Red Cross from first to last without compensation—a full time volunteer. She was the last of her family, her passport application, filed a few months ago, giving the name of a prominent nurse as her "nearest relative."

NOMUS PAIGE, M.D.

DR. NOMUS PAIGE died at his residence at Taunton, April 16, 1919, aged 79 years.

He was born in Wentworth, N. H., March 26, 1840, the son of Joseph and Pamela Elsworth Paige. He was educated in the public schools of that town and at Kimball Union Academy at Meriden, N. H., and was graduated from the medical department at Dartmouth College with the class of 1861. While there he received instruction from Professor Dixie Crosby, professor of surgery. He was an interne at the hospital at Deer Island, Boston, while in college, and after his graduation, was a member of the staff of the Taunton Insane Hospital till 1863, when he opened an office for the practice of medicine in Taunton. For some time he was a member of the staff of the Morton Hospital.

He was at one time a member of the Taunton city council, served on boards of directors of manufacturing and financial enterprises, and founded the municipal lighting plant of the city of Taunton.

He was a member of St. Thomas' Episcopal church.

Dr. Paige joined the Massachusetts Medical Society in 1864, and was placed on the retired list in 1906.

He was twice married; first to Maria Josephine Hewins of Hyde Park, who died in 1876, and later to Mrs. Nora (Colby) Baylies, daughter of Mr. and Mrs. Samuel Colby of Taunton. Two children were born of the latter marriage, Russell Colby Paige, a Taunton merchant, and Katherine Colby Paige Leach, wife of Eugene W. Leach. These children and his widow survive him.

Miscellany.

MEMORIAL TO CLARKE STORER GOULD, M.D.

ON March 28, 1919, DR. CLARKE STORER GOULD, of Norwood, died at the Peter Bent Brigham Hospital, Boston, of septicaemia.

Dr. Gould was born August 2, 1864, in South Boston, and was the son of Dr. Joseph Ferdinand Gould and Lydia (Lawrence) Gould. He was graduated from the Harvard Medical School in 1887, and began practice in Maynard, Mass., but in 1889 moved to Norwood, Mass., which had been his home ever since.

On July 10, 1917, Dr. Gould was commis-

sioned Lieutenant in the Medical Corps of the U. S. Army, and went to Fort Benjamin Harrison, Indiana, for training.

Nov. 10th, the same year, he was promoted to captain, and was stationed at the Base Hospital, Camp Sherman, Chillicothe, Ohio. He was honorably separated from the service on December 27, 1918.

Dr. Gould was a member of Orient Lodge, A. F. & A. M., the Massachusetts Medical Society, and Norfolk County Medical Association.

With his genial manner and social disposition, Dr. Gould won hosts of friends and was very popular in the community. His death was unexpected and came as a shock.

He is survived by his widow, a son, Joseph H. Gould, and a daughter, Hilda P. Gould.

Services were conducted by the Rev. Edward C. Downey, pastor of the church which Dr. Gould had attended about thirty years.

The masonic funeral ceremony was conducted by Worshipful Master Alvin K. Parker, Chaplain W. Lenoir Hood, and officers and members of Orient Lodge, A. F. & A. M.

A tribute to Dr. Gould's efficient service as captain in the Medical Corps, U. S. A., during the World War was the presence, in uniform, as ushers and bearers, of six young men who served in the war.

Cremation was at Forest Hills.

UNITED STATES CIVIL SERVICE EXAMINATIONS.

ASSISTANT EPIDEMIOLOGIST (MALE), \$2,000-\$2,500.
June 3, 1919.

The United States Civil Service Commission announces an open competitive examination for assistant epidemiologist, for men only. Vacancies in the Public Health Service at \$2,000 to \$2,500 a year, and in positions requiring similar qualifications at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. Certification to fill the higher-salaried positions will be made from those attaining the highest average percentages in the examination.

The duties of this position will consist in making epidemiologic and sanitary surveys to determine the prevalence and causation of disease, conducting laboratory studies in relation thereto, and recommending measures to prevent and control outbreaks of disease.

It is desired to secure persons with the following qualifications:

1. Experience in making epidemiological studies of diseases.
2. Familiarity with methods for the prevention of communicable diseases.
3. Acquaintance with all public health laboratory methods.
4. Ability to design and supervise public health laboratory work.

5. Familiarity with methods of disease reporting.
6. Experience in computation and tabulation.

Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General education and medical training	25
2. Laboratory experience	25
3. Experience in epidemiological work	40
4. Publications or thesis (to be filed with application)	10
Total	100

Under the first three subjects competitors will be rated upon the sworn statements in their applications and upon corroborative evidence adduced by the Commission.

Graduation from a medical school of recognized standing and at least three years' experience in epidemiological work under Federal, State, or local authorities, and experience in laboratory technic, especially in regard to malaria and typhoid fever, are prerequisites for consideration for this position.

If a thesis is submitted under Subject 4, it must be on some sanitary subject upon which the candidate has done special work.

Applicants must have reached their twenty-third but not their fortieth birthday on the date of the examination.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass.; New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Post Office, Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Calif.; Old Customhouse, St. Louis, Mo.; Administration Building Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical and county officer's certificates, and must be filed with the Civil Service Commission, Washington, D. C., with the material required, prior to the hour of closing business on June 3, 1919.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

CONSULTING PHYSIOLOGIST (MALE).

June 3, 1919.

The United States Civil Service Commission announces an open competitive examination for consulting physiologist, for men only. A vacancy in the Bureau of Mines, Washington, D. C., at \$10 per diem when employed, and future vacancies requiring similar qualifications, at this or higher or lower rates of pay, will be filled from this examination unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of the appointee will be to study the physiology of gas poisoning, with special reference to gases in mines and in the manufactures associated with mining.

Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated, on a scale of 100: (1) Education, 40; (2) Experience, 40; (3) Publications, to be submitted with application, 20.

Under the first two subjects competitors will be rated upon the sworn statements in their applications and upon corroborative evidence adduced by the Commission.

A degree of M.D., or Ph.D. from an institution of recognized standing, and at least two years' experience, one year of which must have been post graduate, in the physiology of respiration and poisonous gases, are prerequisites for consideration for this position. A certificate of this training from the director of the laboratory in which the work was done must accompany the application.

Applicants must have reached their twenty-first birthday on the date of the examination.

Applicants will be admitted to this examination regardless of their residence and domicile; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year previous to the examination, and who have the county officer's certificate in the application form executed, may become eligible for permanent appointment to the apportioned service in Washington, D. C.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass.; New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Post Office, Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Calif.; Old Customhouse, St. Louis, Mo.; Administration Building Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., with the material required, prior to the hour of closing business on June 3, 1919.

ASSISTANT TO MEDICAL DIRECTOR (MALE), \$2,000.
June 3, 1919.

The United States Civil Service Commission announces an open competitive examination for assistant to medical director, for men only. A vacancy in the United States Employees' Compensation Commission at \$2,000 a year, and vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated, on a scale of 100: (1) General education and medical training, 35; (2) Practical and professional experience and fitness, 45; (3) Publications or thesis (to be filed with application), 20.

Under the first two subjects competitors will be rated upon the sworn statements in their applications and upon corroborative evidence adduced by the Commission.

Applicants must have graduated from a medical school of recognized standing and have had at least one year's experience in Federal, State, or municipal employ.

Under the first subject special credit will be given for the possession of an academic degree.

Under the third subject the thesis should be of at least 500 words in length, on the diagnosis and treatment of fractures.

Applicants must have reached their twenty-fifth

but not their forty-fifth birthday on the date of the examination.

Applicants will be admitted to this examination regardless of their residence and domicile; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year previous to the examination, and who have the county officer's certificate in the application form executed, may become eligible for permanent appointment to the apportioned service in Washington, D. C.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass.; New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Post Office, Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Calif.; Old Customhouse, St. Louis, Mo.; Administration Building Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., with the material required, prior to the hour of closing business on June 3, 1919.

SOCIETY NOTICES.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.—The annual meeting of the Essex South District Medical Society will be held at the Relay House, Nahant, Wednesday, May 14, 1919, at 6.30 p.m.

Dr. Hugh Cabot will be the guest of the evening and will speak on the "Development of the Treatment of Wounds, 1916-1918."

J. J. EGAN, M.D., *President*. H. F. BENNETT, M.D., *Secretary*.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—The annual meeting of the Essex North District Medical Society will be held in Russell Hall, Y. M. C. A. Bldg., 40 Lawrence Street, Lawrence, Wednesday, May 7, 1919.

Papers will be presented as follows: C. Morton Smith, M.D., of Boston, Assistant Professor of Syphilis at Harvard University Medical School, upon "How can Unrecognized Syphilis be Detected?" (40 minutes.)

E. H. Place, M.D., of Boston, Assistant Professor of Pediatrics at Harvard University Medical School, upon "Problems for the Practitioner in the Acute Contagious Diseases." (40 minutes.)

Meetings of the Censors will be held at Hotel Bartlett, Main Street, Haverhill, (Tel. 8710) on the first Thursday in May and November, at 2 p.m. Candidates for admission to the Society should present their diploma to the Secretary of the Society two weeks before.

F. E. SWEETSER, M.D., *Pres.* J. FORREST BURNHAM, M.D., *Sec.*

THE NORFOLK DISTRICT MEDICAL SOCIETY.—The sixty-ninth annual meeting will be held at Hotel Thorndike, Boston, on Tuesday, May 13, 1919, at 5 p.m.

Business meeting: (1) Minutes of previous meeting, (2) Report of Committees, (3) Report of Treasurer, (4) Election of Officers, (5) Incidental business.

Dinner at 6 p.m.

Seats have been engaged for the evening performance at B. F. Keith's theatre. The tickets are for reserved seats in the orchestra and will be distributed during the dinner that members sitting together may be able to do so at the theatre as well.

An assessment of two dollars will be made for the dinner and theatre.

E. N. LIBBY, M.D., *President*. BRADFORD KENT, M.D., *Secretary*.

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Original Articles.

A CASE OF BACK STRAIN CAUSING ACUTE RETENTION OF URINE, WITH BRIEF DISCUSSION OF VARIOUS PHASES IN DIAGNOSIS AND TREATMENT OF LESIONS OF THE LOWER REGION OF THE SPINE.

BY HERMAN W. MARSHALL, M.D., BOSTON.

A FIFTY-FIVE-YEAR-OLD man, in average good health, leaned forward with outstretched arm while standing at his work, pulled on a lever, and felt something give way suddenly in the lower part of his back. The pain was so severe that he dropped to his knees and doubled over a chair to take weight off of his spine: then, in half an hour he resumed work and continued regularly for a week, in spite of back weakness and soreness.

He is a man of average muscular development, five feet seven inches in height and 145 pounds in weight, and he operated a machine that gums paper. When he hurt himself, he was removing a heavy paper roll weighing 480 pounds, exactly as he had done other rolls for years.

A few days after the accident he noticed some difficulty in bladder control, and in one week's time from date of injury, he had first to be

catheterized. Then followed a period of rest from activity for ten days, during which period he was catheterized twice daily for a week and finally was put on constant bladder drainage for three days in a large general hospital in Boston.

At the end of ten days of rest, bladder control became normal again, back soreness tended to diminish a trifle, and there remained uncomfortable burning sensations on urination due to cystitis which had come from repeated catheterizations and bladder drainage.

Previously to his injury he had had no urinary difficulty and on examination he showed moderate enlargement of the prostate, but no evidence of malignancy in it.

Back pains immediately decreased as soon as supports were applied four months after the accident, and they continued to subside steadily from then on.

At first, however, acuteness of the bladder trouble caused a disregard of the back strain and no x-rays of the spine were taken at the hospital: while later at home the physician in attendance was directing attention wholly toward clearing up acute cystitis that had been produced.

X-Rays taken for the first time four months after the initial injury in connection with the writer's treatment, showed no evidence of

latent spinal tuberculosis, concerning which the presenting symptoms aroused suspicions. There were only moderate hypertrophic changes and calcifications of ligamentous insertions that can be considered pathological in the slightest degree.

Clinically, the back revealed at this time considerable limitation of its motions and there was pronounced tenderness to moderate pressure of the finger over the three lower lumbar vertebral spinous processes. Lumbar back muscles were held rather tensely and responded quickly in contraction to protect the lumbar spine. The muscles themselves apparently were not abnormally tender to pressure; but there was tenderness laterally on each side of the spinous process of the last lumbar vertebra at sites of ligaments which bind sacrum, ilia, and fifth lumbar vertebra into a base for the flexible lumbar spine.

Very trifling tenderness was observed at the dorsal sacro-iliae ligaments and none at sacro-sciatic ligaments.

Pain felt by the patient was referred to the lumbar and sacral regions, and also in front to the lower part of the abdomen.

The urine was still cloudy with pus and there were no new intestinal peculiarities, but the patient had suffered from mild chronic constipation for years.

POINTS FOR CONSIDERATION IN DIAGNOSIS.

Diagnosis of underlying causes producing the clinical picture that has been given, first requires brief review of a number of anatomical and physiological features; and for the sake of clearness one x-ray of this back is reproduced, also photographs of anatomical specimens that reveal actual relationships in bones and ligaments. Topics will be taken up in the following order: 1. Ligaments; 2. Muscles; 3. Slipping Sensations in Backs; 4. Painful Sensations; 5. Spinal Nerves; 6. Sympathetic Nerves; 7. Vertebral Anomalies; 8. Variations of Spinal Curves; 9. Sacro-Iliac Displacements; 10. X-Rays; 11. Minor Anatomical Peculiarities; 12. Vascular Peculiarities.

Ligaments hold various bones together and if they, together with muscles which move the parts, always remain strong continuously through life, then such an individual's back is normal, as a rule, unless some disease within bones themselves, like tuberculosis, develops. While ligaments and muscles remain strong and

tense, peculiarities of bony forms and individual variations in postures possess very little practical significance. Ligaments, however, change in strength and tenseness more or less from time to time in response to constitutional variations of good and ill health, and because of these occurrences congenital bony anomalies and postural peculiarities occasionally become matters of practical moment, as will be mentioned later.

Ligaments are well supplied with nerve filaments which are distributed to them, and as a result ligaments become painfully sensitive if in strained conditions they are subjected to additional pressures from the outside.

One of the important points in back examinations, therefore, is determination of exact sites of ligamentous soreness. Sacro-sciatic ligaments, (Fig. I.—1) can be palpated with the finger tip deeply through skin and overlying muscles, and occasionally prove to be the main points of localized tenderness. In passing, the comment should be made that this ligamentous strain is diagnosed not infrequently as inflammation of the sciatic nerve. Sciatic nerves are sometimes involved in pathological processes undoubtedly, yet it is erroneous to imagine them as of common occurrence as sacro-sciatic ligamentous strains.

Strong posterior sacro-iliae ligaments (Fig. I.—2), running from the dorsum of the sacrum upward across sacro-iliae joints to overhanging iliac-bones, are found strained and abnormally sensitive very commonly, and many times are tender on pressure upon one side only of the sacrum.

Deeply located ligaments at the lumbo-sacral juncture a little higher up are sensitive also very commonly to direct deep pressure over this region. These have been removed from the anatomical specimen, but are located at Fig. I.—3. In other instances tenderness is found localized wholly in the lumbar or perhaps even at the lumbo-dorsal section of the spine when spinous vertebral processes are pressed on.

Very important anterior common spinal ligaments running along front sides of vertebral bodies cannot be palpated directly, and in consequence their conditions are not kept in mind as clearly. Presumably, pressures on spinous processes posteriorly are transmitted through vertebrae and produce painful sensations in strained anterior ligaments in some instances, but there are so many other possible explana-



FIG. 1.—Posterior view of pelvis and lower lumbar spine. 1. Sacro-iliac ligaments; 2. Dorsal sacro-iliac ligaments; 3. Location of ileo-lumbar ligaments. (The ligaments have been removed in preparation of this specimen.)

tions for pains produced under these circumstances that strains of anterior ligaments are most difficult to identify. That they occur frequently is attested, nevertheless, by sagging, hollow-backed postures.

All these regions around bones of the lower end of the spine should be examined even though local tenderness does not represent ligamentous strain always; because experience proves that sometimes one ligamentous region is affected, while, at other times, different ligaments in one or more places are strained simultaneously or in succession.

Finally, it should be emphasized again that a stretched ligament can recover its strength, afterwards hypertrophy, and under favorable

hygienic conditions can take care of increased future strains without trouble, although it perhaps never recovers its previous shortness. In consequence, if it happens to be an anterior common ligament, the individual then has a symptomless hollow lumbar curve of the spine.

Muscle peculiarities in back muscles consist of physiological variations of elastic tension, variable irritability to stimulation and sensitiveness to external pressures, variations in size and strength and pathological anatomical changes.

Muscles are found to be relaxed and flabby sometimes when an individual stands quietly poised, while an accompanying ligamentous

strain makes them contract unusually sharply and quickly if any movement is attempted.

At other times muscles are held continuously at an increased tension when inflammatory bone or joint disease causes local reflex muscular contraction.

Examination with an electrical myometer will reveal in such subnormal and hypertense states that larger doses of electricity are required to produce direct local contractions in tensely held muscles than in relaxed ones with diminished tone.

Mechanical stimulation, such as a sudden tap with the finger tip over a sensitive strained dorsal sacro-iliac ligament, occasionally suffices to produce a single quick reflex contraction with an immediately following relaxation in the fibers of gluteal muscles locally where the latter from their situation help to strengthen the particular group of strained ligamentous fibers.

Many muscles, whether tensely or loosely held, are not painfully sensitive to direct pressures necessarily themselves, although associated with painful strained ligaments or pathological foci. Inflammatory processes in muscles, however, occur occasionally; and then there are diffuse or localized spots of tenderness in them from this origin. In gluteal regions, pathological processes develop rarely in muscle sheaths with production of large accumulations of "rice bodies" similar to the "rice bodies" occurring in chronic inflammations of tendon sheaths.

Back soreness must be attributed, therefore, sometimes to definite myositis rather than, or in addition to, ligamentous strain.

Prominence of lumbar back muscles varies with their state of contraction, and a certain amount of confusion has arisen over this fact in estimations of muscular development. Tensely contracted lumbar muscles look larger and in consequence are liable to be judged to be stronger than they really are. Estimations of strength from mere muscular development is not very trustworthy, however, as pathological muscular hypertrophies indicate by accompanying muscular weakness, so that it is safer not to lay too much stress on moderate variations in sizes of muscles. Strengths of back muscles can be estimated more accurately, yet still roughly, by dynamometer tests of individuals' lifting powers.

Slipping Sensations in Back and feelings described by patients of something giving way

in their backs suddenly, have been interpreted as very slight slippings of sacro-iliac joints. Other explanations which have been given include ruptures of a few ligamentous fibers at any of the sites that have been mentioned; slight tearings of muscle fibers or loosening of their fibrous insertions; breaking of adhesions between different muscle layers; abnormal slippings or ligamentous ruptures among the rows of smaller articulating vertebral processes. All of these explanations seem plausible ones at times, but rarely can they be positively differentiated in practice, the particular cause surely being identified while other existing possibilities are positively excluded. Therefore, this indeterminate situation has to be accepted as it is; and occurrence of sudden giving way sensations noted carefully for correlation with other data.

Painful Sensations felt subjectively by patients are referred at times to lumbar, sacral, or gluteal regions. They may be felt down posterior and outer edges of thighs or even to calves of legs. Sometimes they are diffused and at other times painful feelings are more circumscribed. Pains are commonly unilateral in hips and legs, and often are limited to one side of lumbar and sacral areas.

Reflex pains of visceral origin from pelvic organs confuse diagnoses of causes so much that this topic will not be discussed further at this juncture. In passing it should be mentioned simply that a distended bladder occasionally will cause hip pains; and uterine displacements are commonly recognized to be associated with lumbo-sacral pains, and so on.

Spinal Nerves have been held responsible for back and leg pains when alleged slippings of sacro-iliac joints have put nerves connecting lumbar and sacral plexuses on the stretch. This explanation can hold valid only in very rare instances, however, because sacro-iliac joints seldom slip enough to increase tension on any spinal nerves to a harmful degree.

Inspection of Fig. II.—5 shows a post-mortem slipping of the left sacro-iliac joint at its lower front part of a greater degree than occurs in life commonly; and it can be seen from this photograph how little tension would be put on spinal nerves in their course after they leave intervertebral foramina to pass through yielding soft tissues.

Mechanical pressures rather than mechanical stretchings can be more easily accepted as



FIG. II.—Anterior view of pelvis and lower lumbar spine. Sympathetic ganglionated cord diagrammatically shown.

causes for leg pains when it is remembered that each lumbar plexus is embedded in the ilio-psoas muscle. Conceivably, abnormal pressures developed within ilio-psoas muscles from inflammatory oedematous processes might press harmfully in a few instances on lumbar nerves in their course soon after they emerge from intervertebral foramina; but one difficulty with this explanation lies in the circumstance that lumbar nerves in a general way are not distributed to painful regions as much as are sacral nerves; so that it seems further search should be made for causes of painful backs.

Before leaving the topic of spinal nerves, it must be understood that instability of function within nervous tissues themselves has to be considered the cause of fleeting peripheral neurasthenic pains sometimes in various localities, including backs. Definite peripheral neuritis also must be included in causes of back and leg pains as well as lesions of the spinal cord and its coverings.

Sympathetic Nerves and the sympathetic ganglionated cord in lumbar and sacral regions of the spine are subject to very considerable variations, but for purposes of this paper

the latter may be thought of roughly as a pair of ganglia for each lumbar vertebra and sacral segment. (Fig. II.) These ganglia are located in close proximity to the bones.

Nerves that join different sympathetic ganglia together and also medullated nerves running around from intervertebral foramina to sympathetic ganglia, as well as non-medullated nerves passing out from the sympathetic ganglionated cord to unite with sensory branches of spinal nerves, are all particularly liable to be involved in injuries and diseases of bones and ligaments.

At the lumbo-sacral juncture sympathetic nerves are exposed to unusual stretchings, as may be seen from Fig. II. Connecting nerves running between ganglia of the ganglionated cord will be stretched particularly when the spinal column sags forward from weakening of the anterior common ligament.

In the lumbar region in the tunnels under each psoas muscle through which communicating branches between spinal cord and sympathetic ganglia have to pass while closely hugging bodies of vertebrae, there are opportunities for development of abnormal local pressures. The passageways over these muscles are partly bridged over by inelastic fibers into fibro-osseous tunnels which are said to protect from outside pressures, but which simultaneously offer opportunities for harmful pressures from within if by chance local oedema is produced.

And it is true that innumerable instances of involvement of ligaments on anterior sides of lumbar vertebrae in degenerative processes of calcification are observed in so-called hypertrophic arthritis of the spine; so without question such partly deteriorated fibrous attachments are liable to rupture and may produce localized oedematous swellings in the above-mentioned tunnels for communicating nerves.

It is certain at least that patients with well-defined hypertrophic arthritis of the spine suffer occasionally from intractable pains, and similarly, long continued severe pains accompanying slight crushes of bodies of vertebrae can be readily understood as due to results of interference with sympathetic nerves which course around vertebral bodies.

Precise localizations of assumed pressure points cannot be judged with absolute accuracy owing to variations in individual clinical cases in levels of emergence of connecting spinal nerves, and to variations in course of sym-

thetic connecting nerves that pass back to spinal nerves. Nevertheless, the existence of the sympathetic nervous system ought to be kept in mind in judging each clinical case, and without question it is involved in many relationships between internal structures and back or leg symptoms.

Vertebral Anomalies were first called to attention in their relations to back symptoms by Joel E. Goldthwait of Boston in the course of his extensive original studies upon spinal conditions. He pointed out that congenital peculiarities of transverse processes of fifth lumbar vertebrae, when the latter are unusually long, sometimes cause them to impinge against adjoining iliac bones in a manner to produce ligamentous strain. If ligaments of the back stretch enough to allow vertebrae and the sacrum to sag forward, then long transverse processes of the fifth lumbar vertebrae may sink down into contact with iliac bones and prevent a return to previous relationships, besides putting constant new strains on sacro-iliac ligaments.

The anatomical specimen (Fig. II—4) shows post mortem sagging of the spine with impingement of fifth lumbar processes on the sacrum; and if these lateral processes were longer they might easily rest against iliac bones, as can be seen from the picture.

Practical experience has shed much additional light on this theoretical supposition. First, it has made clear that x-ray shadows showing an apparent overlapping of ilia, sacrum, and transverse processes do not mean necessarily that the latter are in contact with ilia or sacrum. Figure III, which is an x-ray of the patient's spine whose history has been given as in illustration, does not prove that his transverse fifth lumbar processes touch either ilia or sacrum. Stereoscopic x-rays prove, on the contrary, that the large proportion of overlapping shadows of these structures do not mean impingements.

Surgical operations performed by enthusiasts in anatomy have brought out the fact that removal of tips of exceptionally long transverse fifth vertebral processes never make the patients strikingly better, but are liable to produce more harm than good from the cutting of important ligamentous stays.

Finally, there have been observed such large numbers of persons possessing vertebral variations without any pathological symptoms what-



FIG. III.—X-ray of lumbosacral region of spine of patient whose history is cited.

ever, that it is certain impinging transverse processes rarely can have much practical importance.

An alternative theoretical explanation in these cases is possible. For example, the transverse vertebral process on the right side of the fifth lumbar vertebra in Fig. II—4 is in contact with the sacrum, and it is possible to imagine in patients with weakening ligaments other similar transverse processes gently sinking down until they just rest on adjacent bones. The additional support thus afforded, perhaps, is sufficient to hold the spine from further sagging, and then such transverse processes may become favorable factors instead of harmful ones.

Regarding harmful strained positions among bones which conceivably may develop, it is to be remembered that ligaments and bones gradually adapt themselves to new relationships until originally strained positions in time may become even the most normal and painless ones.

Accumulated evidence now at hand does not allow denial that vertebral anomalies ever produce abnormal symptoms; but it is certain that they do not often do so, and then usually only

temporarily. Previous ligamentous weakenings are direct causes of pathological symptoms, while subsequent ligamentous strengthenings, accompanied perhaps by slight bony readjustments, finally relieve the troublesome situations.

Variations in Curves of the Spine have also received much attention, and too little regard has been paid to manner of development of these structural peculiarities, for a very pronounced curve of the lumbosacral region, like the one shown in Fig. II, may mean much or nothing, according to conditions existing at the time in supporting ligaments.

Practical experience and accumulated observations on postural peculiarities here again, as with vertebral anomalies, prove that extreme curves are compatible very often with great strength, and they may mean practically no more than symptomless flat feet of some of our athletes. Furthermore, attempts at correction of long standing postural peculiarities have resulted mainly in periods of increased discomfort for such patients.

Extreme lumbar spinal curves show positively only that at some time in the past either

gradually and continuously, or intermittently, painfully or without pain, the spine has sagged. They do not indicate in any way existing musculo-ligamentous strengths at the time observations are made.

Neither should the greater mechanical disadvantages produced by pronounced curves be unduly emphasized, as it is true that many very bad mechanical situations are found in the human body. Muscles and ligaments are designed to cope with these difficult requirements. In good health they are able to readjust themselves, as observations prove, in time within wide limits to care for all satisfactorily.

Sacro-Iliac Displacements are admitted quite generally now to occur in demonstrable degrees only rarely; while assumed very slight slippings, recognizable only from history of sudden giving way sensations in the back, can be neither proved nor disproved positively, owing to other explanations which can be advanced always plausibly.

However, in spite of our inability to prove the fact scientifically, the writer is of the opinion that the weight of evidence is in favor of numerous almost microscopic slippings of these large important joints, as Goldthwait was first to call attention to.

X-Rays deal solely with anatomical appearances, and x-ray interpretations of structural peculiarities are subject to the general limitations and possibilities of this class of data. There is nothing in x-ray plates alone usually to show whether congenital bony variations, variations in spinal curves, tilting of sacra and so on, have, or do not have, significance in individual instances. These practical points can be answered only from knowledge of accompanying ligamentous conditions and changes.

The great value of x-rays lies in revealing presence or absence of definite pathological bony lesions like tuberculosis, fractures, new growths, and hypertrophic periosteal changes; they cannot be depended on as a rule in the interpretation of postural ligamentous troubles, nor to tell significance of existing congenital variations.

The most that can be expected from x-rays in the latter conditions is a positive statement that variations shown in any selected illustrative case have or have not been found from practical observations in other similar cases to represent certain clinical conditions. But col-

lections and correlations of x-ray appearances with clinical data have not progressed to such an extent yet that very reliable estimates can be given upon this point. It is still unjustifiable to say that even an extreme peculiarity of anatomical arrangement among several bones, or a congenital anomaly of one of them, positively is a cause of abnormal clinical symptoms from x-ray appearances alone.

Minor Anatomical Peculiarities, including impingements of vertebral spinous processes against one another, as well as bony peculiarities in rows of posterior lateral articulating processes between vertebrae, have to be mentioned as occasional causes of back pain and for points of localized tenderness in backs.

Figure IV—6 shows involvement of one lateral intervertebral articulation in a definite pathological overgrowth which in life may have been associated with more or less soreness and certainly with considerable limitation of motion.

The idea that localized spots of periostitis are produced occasionally from mechanical interference of spinous processes with each other in extreme backward flexions of the spine produced in injuries cannot be proved or disproved. It is safe to imagine inflammatory reactions are thus once in a while produced.

Superior articulating processes of the sacrum help to keep the spinal column from slipping forward on the sacrum when ligaments are lax. This can be seen from Fig. I. It will be seen that rows of posterior vertebral articulating processes are crowded together in the forward curving of the column, and that in this specimen the inferior articulating processes of the fifth lumbar vertebra bear against the similar superior processes of the sacrum in a manner to prevent slipping. If these particular articulations were like those shown in Fig. IV.—7, with planes of articulating surfaces nearly parallel and facing each other laterally, then theoretically at least, forward slipping would be easier and more completely dependent on ligamentous integrity. Bony articular processes certainly prevent slipping if they are placed diagonally.

This feature of slipping of the lowest lumbar vertebra on the sacrum we are indebted to Dr. Arial W. George of Boston particularly for emphasizing. It is of interest as being the view of the x-ray specialist, while many clinicians hesitate to accept the frequent occurrence



FIG. IV.—Posterior lateral inter-vertebral articulating processes.

of as much forward slipping or suddenly developed visible changes in this region as Dr. George would have us believe from x-ray findings. Certainly, however, he is able to show occasionally very marked forward dislocations of fifth lumbar vertebrae on sacra after severe spinal injuries, and perhaps he is not wrong in assuming that many smaller variations represent slighter forward slippings; yet it is impossible to state whether these latter possess practical significance in the majority of instances in absence of ligamentous data. It is impossible usually to tell in case of recent injuries whether slight forward dislocations have been produced lately or represent slow previous stretchings of ligaments and saggings forward. The writer is inclined to consider them of importance similar to very slight sacro-iliac slippings which cannot be proved or disapproved.

Vascular Peculiarities. The blood stream carries substances that are capable of influencing back ligaments, muscles, joints and bones. Blood always contains waste products which apparently collect in such large proportions in circulation not infrequently that back muscles and ligaments show its effects upon them as weaknesses and laxities. At other times blood may bear pathological bacteria or their products which set up irritative back troubles; and consequently deleterious vascular influences have to be considered in each case of back strain. Details of hygienic regulations, diets and internal medicines cannot be entered upon here, yet their importance has to be emphasized very strongly in days of medical specialism, along with local

measures of immobilizations, orthopedic supports, and back exercises.

CONCLUSIONS WITH REGARD TO THE CASE HERE REPORTED.

This patient presumably tore loose a few fibrous attachments somewhere on the anterior side of his spine when he felt the sudden giving way sensation that has been noted. He irritated the damaged area then by continuing at work, disregarding soreness until there developed in a week's time inflammatory swelling sufficient to produce harmful pressure on nerves running to the bladder; and when he rested presumably the inflammatory swelling gradually subsided enough in ten days to permit a return of normal bladder control.

Tenderness that was observed in the examination in making forward pressure upon spinous processes of the lower lumbar vertebrae, together with data from x-rays in this case, revealing definite calcifications of moderate degree among ligaments of the anterior lumbar region, lead to the plausible explanation that deteriorated lumbar ligaments were the ones to give way partially; and that pathological pressure which developed was exerted against sympathetic nerves in their course to the bladder somewhere in this locality.

Objections to such a proposed explanation undoubtedly will be raised by conservative scientific physicians that it cannot be proved, and that there are many possibilities for error. This is true. The only alternatives are acceptance of reasonable yet improvable ideas based on the facts, as far as the latter are known, or complete rejection of all explanations that cannot be demonstrated in strictly scientific manner.

Medical science has advanced our knowledge tremendously, as is well known, and there appear to be no limits to its possibilities in the distant future. But for the immediate present, practically it does have very many limitations, so that it is very unsatisfactory alone for the majority of extremely complicated clinical situations encountered.

In this predicament, in which the time element is of vital importance, there should be remembrance that judgments of complexities can be entirely correct sometimes, although the truth involved does not lend itself to scientific proof.

By prolonged practice and increased familiarity with peculiarities of backs, careful judgments conceivably may improve to such an

extent that correct diagnosis and proper courses of treatment are arrived at often from very faint scientific clues.

Rational comprehensive judgments of clinical situations, moreover, are needed particularly now to save patients from one-sided strictly reliable scientific viewpoints; because extreme scientific merit is possible while the individual receiving treatment simultaneously is delayed in recovery or even harmed by correct narrow scientific conceptions. So, on the whole, there seems no justification for discarding carefully weighed rational ideas because they do not measure up to scientific standards. On the contrary they appear absolutely necessary to keep medical practice from sinking into scientific absurdities. A balance between scientific conservatism and rational opinions presumably is conducive to greatest progress and to greatest success in treatments.

TREATMENTS.

Treatments cannot be entered into at length. In the case cited in this paper there was most relief from local measures. A steel back splint seated on sacral and dorsal regions of the spine and bridging the lumbar section, together with a webbing belt which encircled both the body and steel brace, pulled the abdomen back a little and tended to lessen the anterior curve of the lumbar spine. The anterior common ligament was relieved a trifle by this very slight change of posture, and comfort resulted. General tonic measures were also instituted simultaneously and special care was taken, in addition, of the acute inflammation of the bladder and of the constipation. He was cautioned with regard to his personal habits, and was told that he must discard the back support before long, substituting exercises that would then limber up and strengthen his spine.

General methods now in use include well-known varieties of orthopedic strappings, belts, braces, jackets, exercises, physical therapy of various kinds, and general hygienic measures. Successes and failures in treatment depend on how these are used singly and in combination, rather than on lack of new varieties. Efficiency is measured by the degree of each physician's understanding of the situation and the skill with which he utilizes therapeutic tools at hand. It may range from inadequate application of a few small pieces of adhesive strips

across the lumbar region to prescriptions of any of the most complicated forms of appliances for exactly right periods of time and in combinations in physiologic manner with other measures of entirely different effect until recoveries are accelerated to the maximum.

There is no satisfactory manner of settling by any fixed rule how each case shall be handled; but inefficient treatments are encountered still so often for one reason or another, that brief reviews of our understandings of back troubles yet are frequently desirable. In this manner refinements and increased success of treatment will be attained better than by adding confusion to existing complexities which already are so great as to tax the capacities of the most of us.

FLAT FEET AND LEG MUSCLE STRAIN, RELATED TO INDUSTRY IN CAUSE.

By DONALD V. BAKER, M.D., BOSTON.

THERE is probably no commoner complicating lesion following trauma than that of depression of one or both of the arches of the foot. This is much more frequent as a complication of injuries to the lower limbs and pelvis than it is to other parts of the body. It may, however, follow any confining and disabling illness, whether industrial in origin or due to contagion and heredity. In two large clinics handling about fifty-four thousand treatments in the past five years, I have found that ninety per cent. of the patients that sustained injuries to the legs and pelvis, or were compelled by reason of accident to favor the feet by rest, suffered pain in the feet and legs. This pain was referred to either or both of the weight bearing arches or in the muscles above. This pain may be of a serious nature requiring a considerable amount of treatment, or it may be transient and be self limited.

The cause of this frequent and often overlooked lesion, is really two-fold. Direct trauma may and often does depress one or both of the arches directly—scoring, as it were, a direct hit on a weak spot in the weight bearing mechanism of the body. If severe enough, this will flatten the arch so far down, that the sustaining muscles are strained tremendously, their muscle tone impaired for the time being, and the pain of acute flat foot brought in to complicate the

contusions of the structures immediately below the trauma.

A case, by way of illustration, is that of an employee of the General Electric Company, of Lynn, Massachusetts, who came first to the clinic some six weeks after an accident at the plant. He had been injured by the accidental dropping of a rather heavy sledge hammer by a fellow employee. The hammer had first struck the hard floor near the injured, and had then bounded over on top of the left foot, striking on the dorsum of the foot, between the third and fourth toes in the vicinity of the metatarso-phalangeal joints. The foot was merely sore at first, and swelled up moderately. Beginning that night, following his work, which he was able to complete, he began to have considerable pain in this foot, and somewhat in the calf of the leg. He received the usual treatment at the plant hospital and had a rather searching examination with the X-ray. All pictures were negative and his foot was finally considered to be one caused by accident but in which there had developed a goodly degree of hysteria. He was given the usual hot soaks and liniment massages which do so much good in the uncomplicated soft tissue trauma cases. X-ray by Dr. R. D. Leonard was again negative,—this second plate was taken as the man had stepped on a nail and there was some question as to a bit of the nail remaining in the foot. Our examination was negative, except that he had a noticeably flattened down anterior arch, and a moderately pronated foot. The condition was so chronic that the swelling had disappeared at the time of our examination. Treatment was begun by having the arches supported by both anterior and posterior felt pads. The exercises pointed out below were then taught him with the idea of not making the pads permanent parts of his weight bearing mechanism. He returned to industry two weeks after he began to wear the pads.

Besides direct trauma, the wearing of a fracture apparatus, with its resultant lack of use and the enforced favoring of the injured leg during the period of convalescence, produces the same result. The constrained toe drop is likewise a strain on the muscles. This is because the arch sustaining muscles and their fasciae have suffered with all the other structures of the leg from atrophy of disuse. It is natural, therefore, that they stretch abnormally under the first strain of weight bearing that

takes place after many weeks and even months. Painful foot strain is inevitable for some days or weeks, if the proper treatment is not given. The tape measure is still our guide to check up the atrophy and it may connote the real reason for continued disability in many of the so called hysterics that constantly complain of pain in the feet and legs.

Atrophy is combined with ordinary muscle weakness from disuse, and the latter may occur without atrophy. Even if atrophy is not demonstrable with the tape, therefore, we must bear in mind that a weak disused muscle, together with its fascia, will stretch abnormally and cause the same symptoms of foot strain and leg muscle strain.

A case from our files will well illustrate the lesion caused by pure muscle weakness. W. R.; suffered a fracture of the left tibia at a point three inches above the ankle joint. He was promptly reduced under ether at the Peter Bent Brigham Hospital and sent home in a plaster cast of the classical type,—from the toes to just above the knee. His recovery was of the usual case, except that at the end of twelve weeks he was still complaining of severe aching in the calf of the left leg. He had about one-half of an inch of atrophy in the left leg. He never complained of pain in the arches of his foot. At times the pain would extend up into the gluteal group of muscles and was severe enough to disturb sleep. The leg was much improved if he did no walking. Careful examination failed to show any degree of phlebitis, periphlebitis, or sciatica. Examination did show a marked degree of pronation of the foot with a posterior arch that was nearly completely flat. A felt arch support was obtained by the patient and he returned to industry within three weeks, by the use of this pad.

The progressive pain of foot strain is not wholly caused by the foot alone, as was formerly taught us by the pioneer orthopedic surgeon. It is hardly anatomically possible that the pain of backache, the pain in the gluteal regions, and that of the posterior aspect of the thigh is directly attributable to a strain of the foot structures. The interdigitation of the muscle groups at the knee, and again at the hip, is scarcely intimate enough to allow us to assume that the foot strain below transmits its strain to each successive group in an upward direction. Rather is the cause to be found in the fact that all the leg muscles have suffered

more or less equally in the same way as have those directly concerned with arch support in the foot. A weak muscle suddenly put to its normal use is quite painful, and we who have not played tennis for some time receive immediate proof of this after one set.

As the pain of the foot strain and its allied leg muscle strain are both caused primarily by loss of muscle tone, exercise is the really logical manner of treatment. The patient is desirous of quick relief from the painful symptoms, and as exercise is very gradual in causing a regaining of this muscle tone, the felt pads are ordered so that an earlier return to industry may occur. The acute symptoms of the strain must first be gone before relief is very noticeable, and rest for a few days is essential in the beginning. Felt, or rubber and felt pads, are more to be desired than metal ones, as they are much closer to the tissues in resilience, and they do not take all of the work away from the arch muscles. This, to my mind, is very desirable as their tone cannot return if complete support is afforded them. The only necessary exercise for the tone of the upper leg muscles is that of ordinary use, plus massage.

The felt pads are only crutches at best, and should be used as such; they should be discarded at the earliest possible moment. To gain this happy result three exercises are very helpful and quite simple.

First, the patient is taught to stand between two chairs in the bare feet, night and morning. With the hands supporting the body by grasping the backs of the chairs, the feet are pulled over from within outwards quite slowly, for twenty-five times. Later on when the feet are less painful, this exercise may be done very rapidly, but never at first. As is readily seen this brings the weight onto the outside aspect of the feet, where it should be, and in doing so uses the posterior arch muscles. Such use rapidly develops their tone and strength. In heavy patients that exercise is to be continued indefinitely, in order to avoid recurrence of pain.

Second, the patient is instructed to purchase a gas filled non-collapsible rubber ball, about the size of the ordinary tennis ball, together with three large agate marbles. He is taught to bear down with his full weight on these, using the marbles for the anterior arch, and the rubber ball for the posterior one. The object of these

procedures is to mould back gradually into normal shape the two arches of the foot.

Third, the patient is shown how to walk slightly pigeon-toed. This is in order to throw the majority of the weight of the body upon the outer aspect of the foot, away from the strained arch and its painful muscles. The ordinary orthopedic shoes are usually admirable to aid in this exercise as they tend to cause this position of the feet on account of the manner in which the last is designed.

In from four to six weeks, if your patient will cooperate with you, the pads may be gradually discontinued. They should be discarded very slowly, beginning with a few hours at a time. The time is then lengthened until they are discontinued for good. Nor does the patient need to consume much time or money, as his visits to the doctor are merely ones for supervision and may be a month apart.

Summary:—Foot strain and leg muscle strain are very important and common sequelae of industrial trauma. They are most important, as they cause real and painful disability and thus affect three people: first, and most important, they cause monetary loss to the workman by prolongation of disability, which can be materially shortened; second, they cause financial loss to the employer who is more or less crippled by the loss of service of an experienced workman; third, they cause loss to the insurer as they increase the cost of industrial insurance. It must be borne in mind, too, that the ultimate cost of all industrial claims is placed upon the workman himself. Adequate and prompt treatment will prevent all of these increases, and the treatment should be as outlined above.

POST-OPERATIVE ANALGESIA.

By BERTHA VAN HOUSEN, M.D., CHICAGO.

Acting Head of Obstetrics, Loyola Medical School.

It would seem at times as though the surgeon, the obstetrician, and even the family physician regards the relief of pain more as a means of facilitating his work rather than a method by which to preserve the strength and increase the recuperative power of the patient.

The surgeon insists upon a profound anes-

thesia for the operation, which is only ten to thirty minutes in length, but leaves no orders for the relief of post-operative pain; or, if he gives such an order, it is not carried out until the patient is exhausted and crazed with the pain, and the relief is only for a short time.

The obstetrician leaves the patient to suffer for many hours without even the support of his presence, and at last at the close of labor gives an anesthetic for from five to thirty minutes.

Even the family physician is warned against giving morphine lest he may obscure the diagnosis, or lead the patient into a narcotic habit.

Lessened mortality has been, up to the present day, the first aim of the medical man, and lessened morbidity the last. That morbidity and mortality are twin sisters is to be demonstrated by the physicians of the future.

We have a few already pointing the way. Most prominent among these is Dr. George Crile of Cleveland, who has taught us that pain and anxiety, as also thirst and insomnia, can do irremediable damage to the brain. Professor Kronig has brought to the field of obstetrics that much abused term "Twilight Sleep," which has proved such a boon to the modern mother. So successful has it been that delicate women have been kept free from pain for one or two days, and by its use the exhausting effects of a long and tedious labor have been avoided and the patient awakens with a sense of well-being and of having had a refreshing sleep.

Hoping to obtain for post-operative patients a condition similar to the obstetrical twilight sleep of Kronig and Gauss, 452 patients were given the following routine treatment after operation: $\frac{1}{32}$ of morphine and $\frac{1}{200}$ of scopolamine every four hours by hypodermic injection for 24, 36, and in very painful cases, 48 hours after operation.

The hours chosen for the administration of the post-operative scopolamine and morphine were twelve, four, and eight A.M. and P.M. Where a number of patients were receiving this treatment it facilitated the work of the nurse to have the doses for all of the patients at the same hour. As patients slept more soundly just after the hypodermic injection and were more wakeful the hours preceding, these special hours mentioned above were found to be advantageous, for it left the patient sleeping during the serving of dinner and supper and during the hours for morning ward work, and awake during visiting hours, between 2 and 4, and 7 and 8 P.M.

The following report of 452 patients was compiled by my assistant, Dr. Martha Welp-ton, from the records of the patients in the Mary Thompson and Cook County Hospitals during the year 1916:

Under "Sleep" the cases are listed as slept well, fairly well, or poor. The first and second nights are given separately.

"Pain,"—anything which might cause patient to complain, as gas, headache, wound, etc. "Emesis" covers any nausea or vomiting during the first two days, even though it were but a mouthful, and but once.

"Respiration" shows a record of respiration under sixteen during the first twenty-four hours. None was found during the second twenty-four hours.

"Pulse" shows record of pulse above 100 during the first twenty-four hours.

MARY THOMPSON HOSPITAL.

Two hundred consecutive cases operated and given post-operative doses of morphine $\frac{1}{32}$, scopolamine $\frac{1}{200}$, for from twelve to forty-eight hours. Thirty-six hours, or until midnight of the second day, was the usual time.

NO. OF PATIENTS	SLEEP			PAIN	EMESIS	RESPIRATION	PULSE
	Poor	Fair	Well				
200 { 1st night	28 (14%)	107 (53.5%)	65 (32%)	46 (23%)	77 (38.5%)	62 (31%)	99 (45.5%)
2nd night	15 (8%)	82 (41%)	101 (50.5%)				

COOK COUNTY HOSPITAL.

Two hundred and fifty-two consecutive cases operated and given post-operative doses of morphine $\frac{1}{32}$, scopolamine $\frac{1}{400}$, for from

twelve to forty-eight hours. Thirty-six hours, or until midnight of the second day, was the usual time.

NO. OF PATIENTS	SLEEP			PAIN	EMESIS	RESPIRATION	PULSE
	Poor	Fair	Well				
252 { 1st night	40 (15.4%)	106 (42.6%)	108 (42.6%)	33 (13%)	93 (37%)	4 (1.5%)	136 (53.9%)
2nd night	20 (7.7%)	87 (34.5%)	145 (57.8%)				

Patients at the County Hospital were given the post-operative dose of scopolamine $\frac{1}{200}$ and morphine $\frac{1}{32}$, but it was soon discontinued and scopolamine $\frac{1}{400}$ was substituted for the $\frac{1}{200}$ on account of the patient occasionally getting out of bed or showing signs of mild delirium, and thereby requiring extra attention from the nurses.

These reports, although very satisfactory, do not begin to compare with the verbal reports given by patients themselves just before leaving the hospital. For the benefit of the post-graduate visitors it has been customary to interrogate patients as to whether they had any nausea or vomiting, and as to the amount and severity of pain following operations. It is often surprising to receive a denial of any stomach disturbance or any pain whatever since the operation, but on referring to the charts, there would be found a record of vomiting or complaint of gas pains or an enema for gas pains. On questioning the patient more closely as to details of happenings during the first two days following operation it became evident that the patient had not only marked and prolonged analgesia but also some amnesia.

Post-operative analgesia is most beneficial to patient and nurse alike. To the patient because it shortens convalescence and leaves no dread of future operations. To the nurse because it enables her to care for her patient as she cares for a healthy infant, there being no necessity for giving moral support or enforcing discipline, and the nurse may sit and read or doze for many hours during the day and pass her nights with comparatively little disturbance. In fact, when a patient is not able to afford a special nurse for more than two or three days, if post-operative analgesia is employed, the patient is advised to have the special nurse the last few days in the hospital, when attractive trays and getting out of bed several times a day add so much to the patient's comfort.

WILLIAM GIBSON RESEARCH SCHOLARSHIP FOR MEDICAL WOMEN.—A sum of money sufficient to provide a scholarship of the yearly value of about £250 has been given to the Royal Society of Medicine. The scholarship will be awarded to qualified medical women who are subjects of the British Empire, and is tenable for a period of two years.

VASODILATORS IN THE INTRAVENOUS TREATMENT OF SYPHILIS WITH ARSPHENAMINE.*

BY GEORGE EDWARD BARNES, B.A., M.D., HERKIMER, N. Y.

I wish briefly to present a few ideas on increasing the permeability of the tissues of the body to solutions of arsphenamine injected intravenously and facilitating the insertion of the needle into the vein. I have already, during the past year, made these suggestions to quite a number of the foremost syphilologists in this country.

No argument is necessary to establish the claim that anything which causes an increased and wider diffusion of arsphenamine through the circulatory channels of the body must be of value, provided no serious side effects are produced. The efficiency of arsphenamine as a spirilloicide having been established, it remains to find methods by which the remedy can be brought into contact with the germs hiding in remote recesses of the tissues. It has occurred to me that vasodilators can accomplish considerable, perhaps very much, in this direction. By their action the arteries and capillaries are opened up so that the blood impregnated with arsphenamine can be driven into the more remote tissues and the lymphatic channels can be more thoroughly reached. The value of any vasodilator for this purpose must be determined by the extent to which it accomplishes this result. The vasodilator, which seems to me to be the best for the purpose considered, is nitroglycerin. Although its action is rather fugacious, it seems to open up the circulatory channels most thoroughly. However, the fact that its action is, especially in some people, of short duration may be an important point in its favor, for it can be applied during short periods at various intervals; and by giving repeated doses in close succession its effects can be, whenever desired, prolonged. Careful attention should be given to proper dosage. Of course, any patient who experiences the so-called nitritoid reaction should not be given vasodilators until that reaction has passed off. Furthermore, every patient's response to arsphenamine should be ascertained before vasodilators are given at all.

Even when an acutely acting vasodilator like nitroglycerin is used, there is good reason to

* Read before the Medical Society of the County of Herkimer, March 4, 1919.

use, in many cases, remedies which will quite continuously maintain a state of normal tension of the blood vessels. Many syphilitic patients, through the emotional reaction¹ aroused by their concern over some aspect of their disease, have abnormally contracted blood vessels, and this condition must be a serious obstacle to the proper diffusion of arsphenamine through their tissues. There is need often of such drugs as gelsemium, bryony, cannabis, sumbul, pulsatilla, lupulin, cramp bark, solanum, conium, aianthus, cypripedium, sparteine, cactus, cimicifuga, etc. I may say that among these drugs sparteine, conium, and cramp bark are especially good for opening up the capillaries. Thyroid extract and potassium iodide also open up the capillaries, but they are not sedative. Sparteine is expensive and conium loses its activity after eighteen or twenty-four months, but both are excellent.

In order to dilate the veins so that the needle can be inserted with greater ease, vasodilators are also sometimes indicated. Nitroglycerin may be tried. It is usually sufficient. It is most conveniently taken in tablet form, chewed up, dissolved in saliva, and swallowed. Such an active drug, however, should not be used until it has been ascertained that the particular patient under treatment does not have the nitritoid reaction caused by the arsphenamine or by the nitrites in the distilled water used. (This suggests circumspection concerning the distilled water.) An important point to be observed in order to have the veins relaxed as well as possible, in some cases, at time of venepuncture, is the administration of drugs that have a sedative effect on the whole nervous system and the blood vessels, as those mentioned above. A warm bath is good. A hypodermic injection of morphine sulphate is doubtless the most efficacious. Whatever reflex contraction of the veins may be produced by the puncture of the needle would also tend to be diminished by the above treatment.

Although the calibre of the veins is not amenable to control nearly so readily as the calibre of the arteries, the above suggestions will be found of very great value.

Not only during the administration of arsphenamine but also during the administration of mercury alone, benefit must be derived by opening up the circulatory channels and by

keeping them properly open when possible. Furthermore, do not unnecessarily frighten the patient, but calm his mind.

In the use of all vasorelaxing sedatives, each case should be watched and medication and dosage so regulated that no undesirable depressing effects may be produced on the heart or brain.

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- ¹ G. E. B.: "Affective Activity, Emotions, as the Cause of Various Neurasthenic Bodily Diseases," *N. Y. Med. Jour.*, April 4, 1914.
- G. E. B.: "The Rationale of Neurasthenia and of Disturbances of Arterial Tension," *BOSTON MEDICAL AND SURGICAL JOURNAL*, Oct. 18, 1917.

Book Review.

A Clinical Manual of Mental Diseases. By FRANCES X. DERCUM, M.D., Ph.D. 2nd Edition. Philadelphia and London: W. B. Saunders Co. 1917.

This second edition of Dr. Dercum's book has preserved the features which were distinctive in the previous edition, and has added certain new ones. The method of presentation of the subject of mental diseases is very clear and illuminating; and the second part of the volume in particular, which takes up very adequately the mental disturbances of various internal diseases, will be found most useful to the general practitioner, in whose care such cases always are, and whose difficulties in deciding whether the mental symptoms are secondary or temporary in character, or the beginning of some more serious mental disorders, are often very great.

The expansion in this edition of the sections on dementia praecox and paresis so as to include the more recent views in regard to pathology and treatment make the book much more serviceable. In his views of the treatment of paresis by the newer methods of intradural injection of salvarsanized serum the writer preserves a sane attitude of doubt, yet gives the very encouraging results of his own work and that of others from this method of treatment. His objection to the intracranial methods of injection of the serum, however, seem rather overstressed. To be sure, the method does mean the making of a trephine opening in the skull but this procedure, when the dura is not opened, is a slight one, and of course does not have to be repeated after the first injection, except in rare instances; and certainly the results by this method, such as those reported by Cotton, which can be confirmed from the experience of the reviewer, are most encouraging, though we must regard the method as still in the experimental stage.

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MEDICINE AND GROWTH.

"MEDICINE AND GROWTH" was the subject of Prof. Henry H. Donaldson's commencement address to the graduates of the Medical Department of New York University held on Saturday, March 1, 1919.

The subject chosen is particularly pertinent in the light of the progress which has been made in certain forms of practice during the past four years, and Prof. Donaldson has laid stress on the fact that while in an academic sense the members of the graduating class are "through," yet as a matter of fact they really are only commencing. *Science*, in its issue of April 4, 1919, publishes the full text of the address:

"A profession," says Prof. Donaldson, "makes heavier claims on its representatives than does a trade or an art, for in the nature of the case it demands continued progress, and it is part of the unwritten law that those who en-

joy the prestige which such a position brings, should leave their profession better than they found it.

"To do this implies progress—progress by growth, and it is the idea of growth that I wish to use as a guiding thread for the conduct of this talk.

"In early times the idea of growth was not considered of essential importance. The typical patient was the person already grown; and the very old or very young were taken care of by non-professional attendants. But great advances have occurred and the relations of age to the incidence of disease have caused a new light to be shed upon illnesses to which the average man, the old and the young, are susceptible. We have learned that all individuals vary in form and anatomy and that this is also true of the functions of the body.

"During the span of life, the body shows changes more or less like those shown by a battered ship or neglected automobile, but behind these lies a set of changes which no dead structure or machine exhibits, a progressive chemical alteration of the body linked with age, probably affecting all its parts, and constituting the series of modifications characteristic of the individuals of any species, as these pass from birth to senile death.

"The mechanism which prepares our food; that which distributes the food-bearing blood; the nervous system which controls our behavior; the muscles which do the work, and the internal secretions from the ductless glands and other sources which serve to tune or tone our organs, all these undergo with age changes not only in themselves but in their relations to one another.

"Temperament is the expression of these relations. Work in the laboratory is done with animals whose age is known and where comparisons in age may be noted. These differences can be observed in man only after long continued study."

The second topic which Professor Donaldson presents for consideration is the growth of medical knowledge, and he points out that most of our medical literature, including that which represents the fundamental sciences, is concerned with the presentation of evidence and arguments for some point of view; but a considerable part of the literature has been removed from the field of central vision and there is always the question of how we can best handle this load of learning. All this takes time.

and there still remains the question of how to make the best possible use of the information which has been presented directly to us and to which we have added by our own industry. If we believed that our own present knowledge were fixed and final, laboratories would cease to exist; whereas quite to the contrary, today we make the best possible use of the information which we have at hand and look forward with confident expectation to the knowledge which tomorrow will bring to us.

But not only is the patient a different individual at different ages, and not only does our knowledge continue to grow with experience, but the growth in the physician himself is a very vital matter, and the effort to keep growing mentally is one of worthy commendation. Countless numbers of examples can be cited of men in the profession who have set the pace. Beginning oftentimes as a mediocre practitioner, they utilized the margins of their time and continued to grow long after others had reached their limit. Observation has shown us what such men have accomplished for the profession and we have realized, during the past four years, perhaps more keenly than ever before, that the effort to keep growing mentally is one strongly to be urged to those who come into action when medicine still feels the impulse of these strenuous years.

HEALTH INSURANCE, THE MEDICAL PROFESSION, AND THE PUBLIC HEALTH.

The possibilities which governmental health insurance might afford toward extending medical service and preventing sickness are commented upon in a recent Public Health Report. This is a problem of personal and professional concern to physicians, and vitally important to public health administration. Probably the chief questions to be considered in estimating the value of any proposed form of government insurance involve the effects it will have upon professional medical service, on the prevention of disease through existing public health agencies, on the efficiency of physicians, and on the administration of public health service.

The proposed governmental health insurance aims to provide not only for the distribution

among a group of persons of economic loss caused by sickness, but also for adequate medical service for the insured and for disease prevention. The principal points to be considered in carrying out this project are sickness expectancy, or the amount of sickness for which medical and surgical service must be provided, methods of providing adequate medical and surgical relief, and measures to be adopted for the prevention of sickness. The estimation of the amount of sickness occurring among wage earners is difficult because of the lack of accurate statistics, although the publication in this report of the statistics collected in several "sickness surveys" afford a basis for computing a sick rate. An estimate, which is probably a conservative one, of the total amount of sickness which will require medical service under the proposed health insurance measures is approximately eight or nine days per insured person.

Methods of providing adequate medical and surgical relief require consideration from both the economic and the professional standpoints. The advances which have been made in medical science in recent years and the refinements in the technique of diagnosis and treatment have both increased the cost to the sick and have made more onerous the work of the general practitioner. Efforts must be made so to adjust medical and surgical attendance and the income of the wage earner that the practice of medicine can rest on a sound economic basis. Suggested plans for providing adequate relief and prevention of sickness are outlined and discussed in this Public Health Report. It is of vital interest to the medical profession, the public, and public health officials, to consider carefully these proposals for governmental health insurance.

CANCER COMMISSION OF HARVARD UNIVERSITY.

THE sixth annual report of the Collis P. Huntington Memorial Hospital for Cancer Research and of the Laboratories of the Cancer Commission describes the various phases of the work accomplished during the year 1917-1918. There has been no serious impairment of activities during the year in spite of war conditions, although research, except the necessary pathological studies incident to hospital

service, in the fields of pathology, chemistry, and genetics has been curtailed.

Valuable laboratory research work has been carried on in the treatment of cancer by light rays, and will probably result in a more accurate knowledge of the causes and growth of cancer, and in a more effective use of radium in the treatment of disease. The privilege offered by the Free Diagnosis Service of the Commission, enabling any physician or hospital in the State to obtain an authoritative pathological report on the nature of a tumor removed at operation, has been taken advantage of by many, and has been especially valuable to the smaller hospitals which are unable to afford the expense of a trained pathologist.

Research work in biology has been actively carried on. Investigations of the utmost interest have been conducted upon living cells, with especial reference to the portion of the cells in which the rays are absorbed, thus permitting tentative conclusions to be drawn in regard to the immediate and the later effects upon cell growth that follow radiation. Further data has been collected on heat sensitization following radiation of living tissues.

In the field of clinical investigation, the greater part of the work has been carried on with a view to the investigation of the most effective methods of treatment of disease by radium, or by radiation, combined with other methods of treatment, such as operation.

Hospital service has been rendered to an increased number of patients. During the year, 767 new cases were admitted to the hospital, a 34% increase over the preceding year. Tabulated classifications of cases and also a detailed report of the Diagnosis Service are included in the report of the Cancer Commission.

BRITISH PHYSICIAN AS COLLEGE PRESIDENT.

It is not generally realized that Sir Auckland Geddes, who has served during the war as Minister of National Service and Reconstruction, President of the Local Government Board, and a member of the House of Commons, is a physician. He has recently been elected principal of the McGill University. Sir Auckland Geddes was a pupil of Sir William Turner at Edinburgh, where he later became

demonstrator and afterwards assistant professor. He was then promoted to a Professorship in Anatomy at the Royal College of Surgeons in Ireland, which he left to accept the chair of anatomy at McGill University. For the present he will continue his duties as Minister of National Service and Reconstruction, and has also been elected president of the Board of Trade. It is expected that Sir Auckland Geddes will begin his new duties with McGill University in the autumn.

MEDICAL NOTES.

APPOINTMENT OF DR. ALICE HAMILTON.—Dr. Alice Hamilton, of Chicago, has been appointed Assistant Professor of Industrial Medicine at Harvard University.

AWARD OF JACKSONIAN PRIZE.—The Jacksonian Prize for 1918 has been awarded to Mr. J. A. Cairns Forsyth, F.R.C.S., by the Royal College of Surgeons, England, for his dissertation on "Injuries and Diseases of the Pancreas, and Their Surgical Treatment."

THE CARDIFF MEDICAL SCHOOL.—The Cardiff Medical School is reported to be in the throes of a prosperity with which it is unable to cope successfully; for medical students, both men and women, are registering at this institution in numbers which tax the resources of this medical centre beyond its capacity. Already there are more students than can be accommodated in the new medical school, which is nearly completed. Although this situation is not without an appalling aspect to the medical authorities, yet it augurs well for the future of the medical profession.

THE BRITISH BIRTH RATE.—The figures reported for the last quarter show that the British death rate, for the first time since the establishment of civil registration, has exceeded the number of births. The excess number of deaths in the fourth quarter of the three preceding years was 44,785. It is believed that the epidemic of influenza is partly responsible for this condition of affairs, although even after taking this fact into consideration, the situation is disquieting.

AMERICAN REPRESENTATIVES AT CANNES.—Additional representatives of the United States have been sent to attend the convention of leaders of the Red Cross societies, eminent physicians, and representatives of public health matters at Cannes. These men include Assistant Surgeon-General N. S. Cummins, Public Health Service, on duty in France; Colonel F. F. Russell, representing the War Department in connection with the Public Health Conference; and Lieutenant-Colonel Lindsay R. Williams, U. S. Army.

SURGERY BY AEROPLANE.—An instance has been recorded in the *Medical Press* of surgical aid brought by aeroplane. A French general, fighting in Morocco, was wounded in the breast by a piece of shell. To avoid jolting over a rough country in a motor, the injured man was transported by aeroplane to the south of Algeria, and the surgeons in charge consulted by wireless with a surgeon in Paris. After a few days, since the patient's condition failed to improve, the eminent surgeon decided to visit him and covered the latter part of his journey by aeroplane. Perhaps this is a prophecy of a regular surgical aid air service which may possibly be established some time in the future.

INFLUENZA IN SOUTH AFRICA.—A report recently received from South Africa states that during the four months in which the influenza epidemic was unchecked, over 40 per cent. of the population were affected with the disease, with a case mortality rate of 5.32 per cent. Among the European stocks, the rate was less than half that among the non-Europeans. Persons from thirty to fifty years of age and pregnant women were particularly susceptible to the disease. The highest death rate from influenza was in Cape Province, where 33.5 deaths occurred out of every thousand of population.

THE VICTORIA CROSS FOR BRITISH PHYSICIANS.—The following is a complete list of British physicians who have been awarded the Victoria Cross for service during the war:

Temporary Captain H. Ackroyd, M.C., 6th Battalion, Royal Berkshire Regiment, at Ypres, France; Captain W. B. Allen, M.C., R.A.M.C., awarded near Meonil, France; Captain N. G. Chavasse, M.C., at Guillemont, France; Captain J. L. Green, at Fonquevilliers, France;

Captain J. F. Russell, M.C., 16th Battalion, Royal Welsh Fusiliers, T.F., at Tel-el-Khuweilfeh, Palestine; and Captain J. A. Sinton, I.M.S., at Orah Ruins, Mesopotamia.

CONSIDERATION OF CHILD WELFARE AT CANNES.—The problem of child welfare is being considered at the conference at Cannes, and plans for a world-wide child welfare campaign are being prepared for consideration at the International Red Cross Convention to be held at Geneva after the peace treaty has been signed. The child welfare program will include the education of expectant parents, the welfare of prospective mothers, obstetrical and other assistance, and nursing supervision. It will be proposed that health studies be established in schools, and that there shall be attention paid to the physical examination of school children, detailed health records, subnormal pupils, and supervision of child labor.

AMERICAN HOSPITAL IN PARIS.—It has been reported in the *Red Cross Bulletin* that it is hoped that a hospital, to be supported by American gifts, may be established in Paris, as a memorial to the United States soldiers who have died in France during the war. This institution would endeavor to give hospital aid to the French and Allied peoples in need, and, furthermore, to strengthen the union between the French and American medical corps by bringing together the study of the methods of both countries.

AMERICAN ROENTGEN RAY SOCIETY.—The twentieth annual meeting of the American Roentgen Ray Society will be held at Saratoga Springs, New York, on September 3, 4, 5, and 6, 1919. The Secretary of the Society is Dr. George W. Grier, Jenkins Arcade, Pittsburgh, Pa.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS.—A meeting of the Massachusetts Society of Examining Physicians will be held at the Copley-Plaza Hotel on May 15, 1919, at 8 o'clock. An address will be given by Dr. Percy Brown, late Lieutenant-Colonel U.S.A., on "X-Ray Diagnosis of War Injuries," and by Dr. A. W. George, Late Major U.S.A., on "X-Ray Diagnosis of Obscure Back and Neck Conditions." Papers will be discussed by Dr.

Paul Butler, Dr. S. W. Ellsworth, and Dr. Constantine Popoff.

NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY.—The eighteenth annual meeting of the National Association for the Study of Epilepsy will be held at the Craig Colony for Epileptics, Sonyea, Livingston County, New York, on June 6 and 7, 1919. The program will set forth the scientific medical, social, and institutional aspects of the problems connected with epilepsy, and clinics and demonstrations of the colony regime will be conducted by members of the medical staff.

The National Association for the Study of Epilepsy was organized at the Craig Colony for Epileptics in 1901, for the purpose of promoting the pathologic, therapeutic, social, and medico-legal study of the epilepsies. In 1912, the Association became affiliated with the International Liga Contra l'Epilepsie, which is the world association for the study of the problem of epilepsy.

At the coming meeting there will be a reorganization and resumption of activities to meet the demands which will be made after the war. There will be discussed plans for a union of the investigators of the epilepsies in allied and neutral countries with those of America.

MORTALITY RATES IN THE UNITED STATES.—Statistics published by the Bureau of Census of the mortality rates from the largest cities in the United States show that for the week ending April 19, 1919, the three cities having the highest total death rates were Memphis, with 25.6 per cent.; Albany, with 25.5 per cent.; and Kansas City, with 20.4 per cent. The three with the lowest mortality rates were St. Paul, with 10.1 per cent. per thousand population; Jersey City, 11.0 per cent.; and Cambridge, 11.2 per cent.

Influenza and pneumonia statistics giving the weekly average in April, 1917, give the following figures: New York the highest, with 7 deaths per weekly average; Chicago, 5; and St. Louis, 4; from influenza. The largest number of deaths due to pneumonia were: New York, 236; Chicago, 143; and St. Louis, 84.

VACCINATION IN MADRID.—An ordinance has been issued in Madrid recently by the Civil Government making vaccination compulsory.

As a result, more than 400,000 persons in the city and province have been vaccinated.

AWARD OF DISTINGUISHED SERVICE CROSS TO AMERICAN PHYSICIANS.—In recognition of their services during the war, the Distinguished Service Cross has been awarded to Surgeon-General Merritte Ireland, Chief of the Medical Corps of the United States Army, and to Colonel Walter E. Bradley.

LARIBOISIÈRE HOSPITAL.—The Lariboisière Hospital has recently been awarded a marble plate, to which is fixed the medal of honor of the Assistance Publique, by the municipality of Paris. The award was made in commemoration of the services rendered by the hospital staff to the people of Paris at the time of the bombardment. After the explosion of the Courneuve, more than 400 casualties were admitted.

SANATORIUM TREATMENT IN LONDON.—It has been reported to the London Insurance Committee that five hundred and twelve discharged soldiers and four hundred and seventy-three of the ordinary insured population are at present receiving residential sanatorium or hospital treatment.

SPANISH NATIONAL CONGRESS OF MEDICINE.—The first Spanish National Congress of Medicine, which has been postponed because of the epidemic of influenza, was held in Madrid from April 20th to 25th, under the patronage of King Alphonso. Over 2,970 members attended the meeting. In order to protect the interests of the profession, a Spanish Medical Association was founded on this occasion.

BRITISH NATIONAL LEAGUE FOR HEALTH, MATERNITY, AND CHILD WELFARE.—A meeting of the National League for Health, Maternity, and Child Welfare was held in London on April 14th. The Ministry of Health and the proposals of the Red Cross Society for helping the civil population in peace were among the topics discussed. The purpose of this league is to form a link between the many voluntary national organizations interested in safeguarding the health of the general population, particularly of the mothers and young children.

PREVENTION OF IMPORTATION OF INFECTIOUS DISEASES.—British sanitary authorities have

held a meeting recently to discuss preventive measures against the importation of infectious diseases into English ports. Because of the prevalence of typhus, smallpox, and other infectious diseases on the Continent and in the east of Europe, it is deemed advisable to make more strict the duties of port sanitary authorities and to arrange for medical examination of aliens.

THE MODERN HEALTH CRUSADE.—More than 3,000,000 American school children from six to sixteen years of age have qualified as Crusaders in the Modern Health Crusade, a system of health education being introduced into thousands of elementary schools. The purpose of this movement is to assist the formation of good health habits in children, and to enlist their support in community service and the control of preventable disease. Elements of play and romance, and a system of definite rewards by promotion through various steps to ultimate knighthood, are introduced into the practice of hygiene, and are the chief factors in the success of the crusade.

ST. MARY'S HOSPITAL.—The twenty-ninth report of St. Mary's Hospital, Rochester, Minnesota, gives evidence of the growth of this institution. In 1889, the hospital was opened with a capacity of forty-five beds by the Sisters of St. Francis, and during the first year of its existence over three hundred patients were admitted. Up to the present time, the hospital has cared for over 96,361 patients.

During the year 1918, there were admitted during the year 8,114 patients, and 9,898 operations, which are recorded and classified in the report, were performed. The total death rate was 1.7.

INFLUENZA IN INDIA.—A recent issue of *The British Medical Journal* has summarized the influenza epidemic conditions in India up to November 30, 1918, based on a report of Major Norman White, I.M.S., Sanitary Commissioner with the Government of India.

Sporadic cases of influenza began to be noticed in June, and a widespread non-fatal disease developed throughout India in July and August. In the middle of September the Bombay death rate began to rise, and the second wave of influenza reached its crest in October. An estimate of the excess mortality over that of the corresponding period in the previous year

leads to the conclusion that not fewer than 4,899,725 persons (about 2 per cent. of the whole population) died of influenza or its complications in British India, the vast majority within the space of two months. Making allowance for the native states, not less than six million persons perished in India. The explanation suggested for this enormous death roll is that Indians have a low resisting power to pneumonic infection. It appears from military data that the fatality rate for Indian troops was at least three times that found amongst British troops in India. Another factor was probably a scarcity of food grains, and especially of fodder, which was responsible for a dearth of milk. Major White's observations on the bacteriology of the disease are in accord with European experience.

GASTRIC AND DUODENAL ULCERS.—A report on the mortality after operations for duodenal and gastric ulcer made at the Mayo Clinic, Rochester, Minnesota, by the New York Life Insurance Company, is of considerable interest. The records of the Mayo Clinic were particularly well adapted to this investigation because statistics regarding patients were recorded for some time subsequent to operation. The cases included those operated upon from January, 1906, to December, 1915, including 2323 cases. Of 521 cases under observation for gastric ulcer, 17% died; of 1651 cases of duodenal ulcer, there was a 5% death rate; of 91 for gastric and duodenal ulcer, 10% died.

The results of the mortality investigations show that (1) the percentage of operative deaths in the hospital following operation for gastric ulcer was fully twice that for duodenal ulcer; (2) the mortality among persons operated upon for gastric ulcer is three times as high as among those operated upon for duodenal ulcer during the three years following the operation; (3) the mortality among persons operated upon for gastric ulcer decreases relatively after operation, but the data are not sufficiently extensive to determine the number of years which must elapse before the death rate is similar to that of the general population; (4) the mortality among those operated upon in the Mayo Clinic for duodenal ulcer is less than that among the general population.

The average age at the time of operation of those operated upon for gastric ulcer was forty-seven in the case of men, and forty-three in the

case of women; the average age of those operated upon for duodenal ulcer was forty-four and forty-two respectively.

NATIONAL TUBERCULOSIS ASSOCIATION.—The fifteenth annual meeting of the National Tuberculosis Association will be held in Atlantic City, at St. Paul's M. E. Church, on June 14th, 16th, and 17th. The future of the tuberculosis movement, and the question of whether it shall remain specialized or merge with other health agencies, will be discussed. Dr. Livingston Farrand will deliver an address, and the national health program will be outlined by Dr. John R. Commons.

At the meeting of the Pathological Section, the following topics will be considered:

Etiological studies in tuberculosis, experimental studies on the migration of tubercle bacilli in the guinea pig body, the changes in the ultra pulmonary lymphoid tissue of the rabbit's lung, induced by the intravenous inoculation of acid fast bacilli, the circulatory relationships of experimental tubercle in the rabbit's lung, an investigation of the acid fastness of tubercle bacilli, the effect of ether and chloroform upon experimental tuberculosis, organisms of secondary infection in pulmonary tuberculosis, and hemolytic streptococcus as a secondary invader in pulmonary tuberculosis.

At the meeting of the Clinical Section will be discussed the epidemiology of tuberculosis in the military service, tuberculosis and the war, the employment of rest and exercise for tuberculosis patients after return to work. X-ray diagnosis of lung tuberculosis, and artificial pneumothorax.

The Sociological Section will consider the advantages of more centralized control in solving the tuberculosis problem, the problems involved in the care of the discharged tuberculous soldier, and the removal and relief of poverty as factors in the prevention of tuberculosis.

The problem of the education of the public health nurse for tuberculosis nursing, and a schedule of tuberculosis work will be considered by the Nursing Section.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending April 26, the number of deaths reported was 246, against 273 last year, with a rate of 16.11, against 18.15 last year. There

were 41 deaths under one year of age, against 45 last year.

The number of cases of principal reportable diseases were: Diphtheria, 27; scarlet fever, 40; measles, 17; whooping cough, 13; typhoid fever, 1; tuberculosis, 42.

Included in the above, were the following cases of non-residents: Diphtheria, 5; scarlet fever, 3; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 2; tuberculosis, 29.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 7.

Influenza cases, 47; influenza deaths, 12, of which 1 one was non-resident.

MEDICAL-SOCIAL WORK OF THE BOSTON CITY HOSPITAL.—The Department of Medical Social Work organized at the Boston City Hospital a few years ago has developed rapidly, and has become one of the most useful and important branches of the hospital work. The report for the year 1918 describes the wide range of service rendered during the year.

The task of providing for civilian relief has been particularly difficult because of the many demands which have been made for trained workers and for money. Under the direction of the State Board of Health, a clinic for the treatment of syphilis was opened at the City Hospital and a worker was placed in the Skin Out-Patient Department to take social care of patients suffering from syphilis. Treatment has also been given to women patients with gonorrhoea. The social work conducted among the gynecological out-patients, prenatal cases, and young unmarried mothers has been one of the most important aspects of the work. Although there is no department at the Boston City Hospital devoted exclusively to children, a large part of the work of the Out-Patient Clinics is connected with them. Intensive social work has been carried on in two hundred and fourteen cases, and a larger number have received convalescent care, medical follow-up service, home nursing, and dental care. During the influenza epidemic the Medical-Social Department rendered timely assistance to many families.

MASSACHUSETTS ANTITUBERCULOSIS LEAGUE.—The fifth annual conference of the Massachusetts Antituberculosis League was held recently in Boston. Dr. Vincent Bowditch, president of

the League, delivered an introductory address which will be published in a future issue of the *JOURNAL*. Other speakers included Dr. Donald B. Armstrong, Dr. Philip P. Jacobs, Mrs. Anna M. Staebler, Dr. Bayard T. Crane, Mr. Seymour H. Stone and Dr. David Russell Lyman.

Dr. Jacobs mentioned the importance of reaching the people through the sale of Red Cross Christmas seals. The opinion was expressed that adequate management of this sale next winter would produce sufficient revenue for the State and local organizations. It is expected that the national revenue from the sale of seals next Christmas will be about six million dollars. In outlining a State program for anti-tuberculosis work, Dr. Jacobs is reported to have recommended the organization of machinery for the provision of adequate hospital care for advanced cases of tuberculosis, sanatorium care for early cases, dispensary care of cases outside the institutions, nursing instruction in the home, open-air schools, industrial work for patients, education of children and adults, stimulation of local societies, and coördination of all anti-tuberculosis agencies. He emphasized the necessity of raising the standards of interest, diagnosis, and treatment in the medical profession through the promotion of the consultant service, such as is carried on in Framingham.

Dr. Donald B. Armstrong, director of the community health and tuberculosis demonstration in Framingham, is reported to have said in part:

"Examination of thousands of the population of Framingham has shown that about 2 per cent. of people of all ages are tubercular, and about 1 per cent. have the disease in an active form. Applied to the United States as a whole, this means that there are at least 1,000,000 active tuberculosis cases that ought to be under care in contrast to the 200,000 or 300,000 that are really known to exist. There are an additional 1,000,000 or more arrested cases, which will later break down unless they receive special attention."

In speaking on "The Discovery of Tuberculosis," Dr. Armstrong is reported to have made the following comments:

"The United States must pay more attention to the discovery of tuberculosis. In Framingham this work has been accomplished through medical examination activities among infants, in schools, in factories, and in the homes of the people by sending tuberculosis specialists and

nurses to make expert family medical examinations. At the beginning of the health demonstration in Framingham there were 27 known cases of tuberculosis. Including arrested cases, there are now more than 200 cases under observation or treatment.

Framingham had previously a first-class nurse and clinic, yet a large number of cases would not have been discovered without special effort. Framingham is the only town in the world with most, if not all, of its tuberculosis under control. The tuberculosis death rate has dropped since 1907 from 121 per 100,000 to 74 per 100,000 in 1918.

Framingham has undoubtedly the best equipment for health in the United States. The tuberculosis activities there are under the supervision of the National Tuberculosis Association and are financed by a special gift of \$100,000 from the Metropolitan Life Insurance Company. Private agencies and individuals in Framingham have given generous aid and support, and so have most of the branches of the Framingham Town Government which are interested in health. Philadelphia, Cincinnati, Brooklyn, Milwaukee and other cities are copying the work in Framingham."

The Massachusetts Medical Society.

Programs for the one hundred and thirty-eighth anniversary of the Society, the exercises of which will be held on Tuesday and Wednesday, June 3 and 4, at the Copley-Plaza Hotel, Boston, have been received by the Fellows. A more detailed program will be printed in the *JOURNAL* of May 29.

Obituary.

CORNELIUS AUGUSTUS AHEARN, M.D.

DR. CORNELIUS AUGUSTUS AHEARN died at his home in Lynn, April 17, 1919, aged 78 years.

Dr. Ahearn was a graduate of Harvard Medical School in the class of 1866 and had practised in Lynn all his life. During the Civil War he was acting assistant surgeon, U.S.A. A son of the same name graduated from Harvard Medical School in 1889 and practises medicine in Salem. The father's name was placed on the retired list of the Massachusetts Medical Society in 1906.

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR MARCH, 1919.

GENERAL PREVALENCE.

THE total number of cases reported for the month of March was 9,758, as compared with 14,105 for March, 1918. The total for the current month includes 2,928 cases of influenza. The case rate per 100,000 for March, 1919, was 244, as compared with 325.6 for March, 1918.

A decrease in reported incidence of German measles and measles occurred from the corresponding month of a year ago.

Gonorrhea with 1,000 and syphilis with 499 reported cases have reached the high watermark of their existence as reported.

All other communicable diseases have shown approximately the same incidence as of last month with the exception of chicken pox, measles, scarlet fever, whooping cough, and pulmonary tuberculosis, which have shown slight increases.

There have been no outbreaks for the month, but the continued high incidence of scarlet fever in Gloucester and Salem speak for the need of greater activity upon the part of all so that the number of "missed" or "unrecognized" cases be searched for and contact limited as much as possible.

Diphtheria was reported in 659 cases, a decrease from the preceding month when 679 were reported.

Measles. There were 778 cases of measles reported for the month, while during the corresponding month of 1918, 4,018 cases were reported; 778 is probably the lowest total ever reported for March.

Could we feel that this low incidence was due to preventive measures rather than to the fact that the high incidence of the past few years has taken the bulk of the non-immune, there would be just cause for elation.

Influenza showed a sharp decline from the preceding month; there were 2,928 cases reported this month, as compared with 6,435 reported for February.

It is believed that the former total is somewhere near the usual seasonable incidence for influenza.

Scarlet Fever increased from 561 for February to 719 for March, and, with the exception

of the North Eastern District, cases were well scattered.

Whooping Cough for the month of March showed an increase of 100 cases over the preceding month, there being 454 cases reported during March.

Typhoid Fever showed nearly a 50% decrease in incidence for March; there being 46 cases reported, while 71 cases were reported in February.

Lobar Pneumonia showed a decrease in number of reported cases; there were but 588 cases reported, as compared with 663 for the previous month.

RARE DISEASES.

Anterior Poliomyelitis was reported from Boston, 1; and Milford, 1; total, 2.

Anthrax was reported from Lynn, 1.

Epidemic Cerebrospinal Meningitis was reported from Arlington, 1; Boston, 7; Brookton, 1; Clinton, 1; Dedham, 1; Falmouth, 1; Greenfield, 1; Lawrence, 1; Lynn, 2; New Bedford, 1; Wrentham, 1; and Worcester, 1; total, 19.

Pellagra was reported from Haverhill, 1; and Melrose, 1; total, 2.

Septic Sore Throat was reported from Boston, 6; Brookline, 1; Chelsea, 3; Dedham, 1; Fall River, 2; Haverhill, 2; Melrose, 1; Natick, 1; Newburyport, 1; and Peabody, 1; total, 19.

Smallpox was reported from Boston, 6; and Everett, 1; total, 7.

Trachoma was reported from Boston, 1; Lowell, 1; and Somerville, 1; total, 3.

Trichinosis was reported from Boston, 2.

Correspondence.

PSYCHOANALYSIS: A REJOINDER.

Mr. Editor:—

In the issue of your JOURNAL for March 27, 1919, there appeared a letter from the pen of Dr. J. W. Courtney that should interest all medical men and is calculated to arouse the general public as well. It concerns the abuse of their privileges on the part of medical officers in foisting half-baked theories of nervous disease on helpless victims of war strain, much to the detriment of the victims.

Dr. Courtney derives his inspiration for these charges from two sources. The first is a book by Major Hurst, R.A.M.C., on "Medical Diseases of the War," in which he claims that British psychoanalysts have attempted to force a sexual etiology in cases of "shell shock," while avoiding the obvious causation to be found, inevitably, in the conditions of modern warfare. The second source is, "learning that the same unspeakable indignity is being practised in an American military hospital upon our own wounded from overseas With these stimuli, your correspondent does not hesitate to attack psycho-

analysis on the ground of its general perniciousness and its Viennese origin, nor does he refrain from accusing psychoanalysts as a class of being medically unbalanced and (by obvious implication) of being ignorant of "the concentrated inferno of modern warfare" by reason of cowardice.

As to the alleged abuses in the British Army, having no responsibility and no power in the matter, we can only be sympathetic and hope that the conditions are exaggerated. I have worked in five British hospitals where neuroses are treated, and talked with at least a score of the leading neurologists whose interest is the care of these cases. Never have such occurrences as Major Hurst describes come to my attention. I have even heard him attack psychoanalysis at the Royal Society of Medicine where the topic under discussion was the relation of Freudian psychology to war neuroses, but, if my memory does not fail me, he made no such accusations at that time (the spring of 1918). I am forced to the conclusion that the instances are rare. In passing, one is tempted to remark that it is not surprising for a neurologist to be led into giving full credence to the testimony of the poor sergeant whose case (the only one) is quoted and who had to restrain himself from shooting the "psychoanalyst." A psychiatrist on reading the symptoms would, perhaps, be more cautious.

But we cannot be content with such a *laissez faire* attitude when our own soldiers are the victims. These are allegations not of tactlessness, or even of inefficiency, but of downright malpractice. Crimes are not to be met with rhetoric. Machinery exists both in and out of the Army to deal with them. However biased the views of one school of medicine or another may be, the public cares not for this but is interested in the welfare and safety of its soldiers. Would it not be wise for the credit of the medical profession to have investigation initiated by physicians?

One gathers on reading Dr. Courtney's letter that he is inclined to blame, not individuals, but psychoanalysis for this crime. But are all gynecologists to be termed murderers because some are abortionists? He disparages the theory, also, because of its origin. To fall back on another analogy: Syphilis is unsavory and salvarsan came from Frankfort. Should we, therefore, abandon this branch of chemotherapy?

Who are psychoanalysts? Are they worthy of respect or defense? It would be tedious to answer this question thoroughly, but I should like to reminisce for a moment to recall my most recent medical associations—in the American Expeditionary Force. The chief consultant in neuropsychiatry was an officer who is more than sympathetically interested in psychoanalysis. The heads of the Special Base Hospital for Neuroses and of the hospital from which all mental and nervous patients were evacuated to America were both psychoanalysts. The organization of this branch of the service was such that their results were better, I fancy, than that of any other specialty. I believe the statistics when published will show this. We were better organized to care for neuroses than any other of the Allied Armies. At one time or another I met, I suppose, forty or fifty of the officers engaged in this work. The majority were interested more or less keenly in psychoanalysis; many are constantly on duty at the front. Not once did I ever hear it even suggested that war neuroses were due primarily to sexual factors, the strain of warfare being neglected. Such practices as your correspondent inveighs against would have been unthinkable.

He has raised the question of courage. Would it be too much to ask Dr. Courtney to be specific, to tell us where, when, and by whom these "Hunnish atrocities" were committed? As Americans and physicians we have a right to ask, and those of us who are not "shamed of being called psychoanalysts" feel that we have an especial right to challenge this information.

JOHN T. MACCURDY.

Late Captain, M. C., U. S. A.

RABIES.

Boston, April 19, 1919.

Mr. Editor:—

The "mascots," etc., of our returning fighters may bring unsuspected danger. Our false security is enhanced by a serious mistake in the current *National Geographical Magazine* (page 279) to the effect that not a case of rabies has appeared in England since 1902. On the contrary, last year an epidemic started there (probably in May, 1918, but whether brought by air craft or by sea craft is uncertain) and is still increasing its field. In France rabies has steadily spread since the first of the war, in a virulent and short-incubation type. Accordingly, the English Government, early in January, arranged for proper treatment at Plymouth, but late in February, the responsible officer in Parliament deprecated the view that the danger was over—as it turned out, with good reason. Fortunately, such proper treatment is successful, 9,000 cases in the Lyons district giving a mortality under one-tenth of one per cent.

My chief object in this letter is to urge readers to do some missionary work against killing suspected dogs before the popular mind becomes unreasonable through fear. If the dog is killed after biting, the chance of a sufficient autopsy is slight and the injury is serious to the person bitten; he would not duly appreciate a negative finding in a scientific examination, but if the dog lives and is obviously healthy, the patient has no excuse for "psychic hydrophobia" which has been found to exist independent of rabies. Such killing of the dogs seems to be a curious survival of the trial and punishment of animals, on which much has recently been written.

ALFRED ELA.

REFERENCES.

- ¹ British Medical Journal, March 22, 1919, 350, 1.
- ² Medical Record (N. Y.), Dec. 21, 1918, 1078.
- ³ Lancet, Jan. 11, 1919, 74.
- ⁴ Medical Record (N. Y.), March 29, 1919, 530.
- ⁵ Journal American Medical Association, March 15, 1919, 800.
- ⁶ New York Medical Journal, Feb. 22, 1919, 313, 14.

UNITED STATES CIVIL SERVICE EXAMINATION.

PHYSICIAN (MALE), PANAMA CANAL SERVICE.

June 15, 1919.

The United States Civil Service Commission announces an open competitive examination for physician, for men only, on June 18, 1919, at the usual places for examination. Vacancies in the Panama Canal Service at the salaries indicated, and in positions requiring similar qualifications, at those or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The entrance salary is \$150 a month; promotion may be made to \$200, \$225, \$250, \$275, \$300, and to higher rates for special positions. Entrance rates for physicians experienced in care of the insane, \$200 a month.

Applicants must be unmarried; must have graduated from a recognized medical school whose graduates are eligible for commission in the United States Army; and must have had at least one year's post-graduate hospital experience.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twenty-second but not their thirty-first birthday on the date of the examination.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted.

Before being permitted to sail for the Isthmus, appointees must undergo a rigid physical examination by a designated physician after the appointment has been actually issued. There will be no charge for this examination, but the appointee must pay his transportation to the place of examination. The official physicians are located at the ports of departure and in a number of the large cities throughout the United States.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C. Applications should be properly executed, including the medical certificate, but excluding the county officer's certificate, and filed with the Commission at Washington, D. C., in time to arrange for the examination at the place selected by the applicant.

The exact title of the examination, as given at the head of this announcement, should be stated in answer to Question 1 of the application form.

Until further notice, no applications for the Panama Canal Service will be received for the nonassembled continuous examination for physician (Announcement No. 1957-Amended), last issued January 17, 1919. Applications, however, will be received for the other branches of the service mentioned in Announcement No. 1957.

NOTICE.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.—The American Board for Ophthalmic Examinations will hold its next examination at the Willis Eye Hospital, Philadelphia, Friday and Saturday, June 6 and 7, 1919.

The examination next June will be the fifth to be conducted by the Board. This Board is composed of representatives of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-laryngology. By arrangement with the American College of Surgeons, the Board has become the Ophthalmic Credentials Committee of the College and conducts the examinations of the ophthalmic candidates for Fellowship in the College.

For a certificate of this Board, the examination in ophthalmology consists of: first, case records; second, written examinations; and third, clinical laboratory and oral examinations, or so much thereof as may be judged necessary.

a. Candidates in ophthalmology are required to submit twenty-five complete case records of which not more than ten should be descriptive of operations. These records should be of cases of ocular diseases and defects of varied character, including errors of refraction or muscle balance; external ocular diseases or diseases of the uveal tract or retina, or of the optic nerve, or glaucoma. The reports should show especially the reasons for the diagnosis and for the operative treatment and the technic of operations in operative cases.

b. The written examination will test the candidate's knowledge of the underlying principles of the science of ophthalmology, including anatomy, embry-

ology, physiology, physiologic optics, pathology, relations of the eye to the other organs and diseases of the body.

c. The oral examination will include:

The external examination of the eye.

Ophthalmoscopy (Candidates are requested to bring their own ophthalmoscopes.)

Measurement of errors of refraction.

Testing of the ocular movements and fields of vision.

Relation of ocular conditions to diseases of other parts of the body and their treatment.

Laboratory examination in histology, pathology, and bacteriology of the eye.

Further information may be had upon request from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, Ill.

SOCIETY NOTICE.

THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY.—The New England Women's Medical Society will meet at the home of Dr. Helen I. Woodworth, Hotel Cluny, Boylston Street, near Clarendon Street, on Thursday, May 15, at 8 P.M. Speakers: Dr. Anna C. Wellington, who worked nine months in Paris with the American Red Cross, receiving the American wounded, and Dr. Emily C. MacLeod, Massachusetts Chairman of the American Women's Hospitals.

ALICE H. BIGELOW, M.D., *Secretary.*

RECENT DEATHS.

DR. EVERETT JONES died at his home in Brookline, April 25, 1919, aged 50 years. He was a graduate of the Boston University School of Medicine in 1898, became a Fellow of the Massachusetts Medical Society in 1907, and practised ophthalmology, laryngology, and rhinology, with an office in Boston.

DR. LETITIA M. TILTON died recently at her home in Jamaica Plain. Dr. Tilton was born in New Hampshire eighty-six years ago and practised for many years in Boston. Dr. Tilton was one of the oldest women physicians in Jamaica Plain.

DR. CALVIN S. MAY died recently at his home in New York, after a long illness. Dr. May received his degree from the Yale Medical School in 1873, and was appointed house surgeon in the New Haven Hospital. He later became acting superintendent of the Connecticut Hospital for the Insane and of the State Hospital for the Insane at Danvers, Massachusetts. Since 1883 he had practised in New York. Dr. May was born in Naugatuck, Connecticut.

DR. JOHN F. CAULFIELD died on May 1, at his home in Woburn, from pneumonia, at the age of forty-four years. Dr. Caulfield graduated from Tufts Dental College, and had been practising dentistry in Woburn for several years.

The Boston Medical and Surgical Journal

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Original Articles.

CHORDOMA.

By ERNEST M. DALAND, M.D., BOSTON.

[From the West Surgical Service, Massachusetts General Hospital.]

THE nuclei pulposi, in the centers of the intervertebral discs of infants, are the only remnants of the embryonic notochord normally found in the human being. The notochord, of entodermal origin, is the foundation upon which the bodies of the vertebrae are built. Notochordal tissue is at first made up of epithelial cells. Vacuoles develop in these cells. A certain amount of mucin then forms in the vacuoles but later breaks through the cell walls. The result is the formation of a vacuolated synectium, suspended in a gelatinous matrix. The vacuolation somewhat resembles that seen in chondromata.

H. Müller has shown that other remnants of the notochord are frequently found at post-mortem—chiefly at the base of the skull and on the coccyx. Virchow describes a series of such growths under the name of eechondrosis physalifera, considering the vacuolation that of chondromata. Ribbert proved that they were the proliferated remains of the notochord. In 2% of a series of cases, he found remnants in

the bony tissue beneath the dura of the clivus Blumenbaehi,—that portion of the sphenoid bone which is continuous with the basilar groove of the occipital bone. Ribbert further demonstrated pedicles connecting them with the bone, within which there was similar tissue. Growths of this nature have also been demonstrated on the dorsum sellae, the hypophysial fossa, and more rarely, on the sacrum.

Hence these notochordal tumors or chondromata have, until recently, been mere pathological curiosities. With the reporting of several malignant chondromata, their clinical significance has become of more importance. In a malignant chordoma, the cells tend to differentiate into the synectial type of vacuolated cells, which are typical of adult notochordal tissue. Usually foetal, adult, and intermediate types are to be found in the same tumor.

But 16 cases of chordoma have been reported clinically. Of these, ten had their origin at the base of the skull; one sprang from the anterior surface of a cervical vertebra, while the other five appeared in the sacro-coccygeal region. When the tumors appeared at the base of the skull, death usually followed a history of cranial nerve disturbances with pressure symptoms. One case was operated upon and did not recur, this being the only successful radical operation in this group. In one other case suffi-

cient material for diagnosis was everted out, and the patient was alive at the time of writing. The case in which the chordoma appeared in the cervical region resulted in death from pressure on the cord.

Of the five sacro-coccygeal cases, in all of which there was pressure on the rectum, one was operated upon without recurrence, one was removed only to recur and cause death, while the others were operated upon twice each but all ended fatally. None of the tumors metastasized; but invasion of the rectum or of the bones of the skull was frequently observed.

Grahl was the first to report a case giving clinical symptoms. His patient was a 51-year-old woman who developed difficulty in swallowing and an impediment in speech. Paralysis of the third, sixth, and seventh cranial nerves followed and, after three years, she died with symptoms of bulbar paralysis. At autopsy the tumor was found to be a lobulated extradural mass, springing from the sella turcica and connected with the latter by a pedicle 4 cm. long. The tumor, $9 \times 3.5 \times 3.5$ cm., was a soft, jelly-like mass, definitely circumscribed and covered with dura.

Fischer and Steiner's case was a 17-year-old girl, who complained of difficulty in moving her head and of pain in her neck. Paralysis of the left arm and leg developed, accompanied by a contracture of the left hand. Later there was a complete right sided paralysis, together with a double ankle clonus and double choked disc. Autopsy revealed a tumor arising from beneath the dura of the clivus Blumenbachi and extending backward to the second cervical vertebra. The spinal canal was invaded and the cord compressed.

Klebs' case was the first one to be reported in which the chordoma did not lie at the base of the skull. In this case, the tumor sprang from the anterior aspect of a cervical vertebra. Pressure on the medulla and cord caused death.

Linck: A middle aged man presented a mass in the left side of the roof of the mouth and posterior pharyngeal wall, not affecting the mucous membrane. Later there were symptoms of a tumor at the base with paralysis of the sixth, partial paralysis of the seventh, and slight involvement of the eighth nerves, all on the left. There was loss of the sense of taste in the left side of the tongue and complete loss of sensation in the left pharynx, larynx, and tongue. Involvement of the tenth and eleventh

nerves was indicated by a left recurrent laryngeal paralysis and paralysis of the sternomastoid and upper trapezius muscles. The left half of the tongue was atrophied and protruded to the left. Reflexes were normal. Diagnosis in this case was made by exploratory puncture with removal of specimen.

Frenkel and Bassall described a tumor extending from the foramen magnum to the optic foramina with the destruction of the sella turcica, much of the ethmoids, invasion of the sinuses, and final extension of the tumor into both nasal cavities. The tumor, covered with dura, entangled the third nerve and pressed on the optic nerves. The patient was 39 years old.

Seiffer's patient of 33 years for four years had had severe pain in the back of her head, occasional vomiting and attacks of dizziness. There was no choked disc but there was a slight left sided paresis. Death was sudden, with symptoms of collapse. Postmortem examination revealed a chordoma at the foramen magnum, growing out of the base of the skull and pressing on the medulla. The tumor was soft and nodular, about the size of a large chestnut.

Wegelin: A woman of 25 years died with bulbar symptoms. Autopsy showed a 5×3 cm. tumor, the origin of which was well behind the end of the clivus. The tumor was tightly packed in front of the foramen magnum and was covered over with dura. It had grown around the left hypoglossal nerve and had flattened the pons and medulla. The inner half of the clivus was nearly replaced by the tumor mass, which extended forward to the tonsil.

Eitel: A 44-year-old man died with symptoms of a brain tumor. Examination showed a $4.8 \times 4.5 \times 3$ cm. tumor, starting from the clivus and breaking through its dural covering. The pons was flattened and compressed. Tumor cells were found in the bony structure of the clivus.

Hässner: A 32-year-old man noticed pressure symptoms for four years. Dizziness and diplopia were his first complaints. Later he developed double choked discs, severe pain in his head, and finally a right sided paralysis of the sixth nerve. Lumbar puncture showed the spinal fluid to be under increased pressure. He was found dead in bed. The tumor lay beneath the temporal lobe on the right, extending forward to the frontal lobe, and practically filling the right middle fossa. The optic chiasma, right olfactory and abducens nerves were pushed over

and surrounded by the tumor tissue, but not invaded. The right half of the brain, particularly the pons, was pushed over and flattened.

Jelliffe and Larkin had a patient with paralysis of the second, third, fourth, sixth, seventh (partial), eighth, and twelfth nerves. There was a left hemiplegia with positive Babinski's. Symptoms began with dizziness and ended with delirium, incontinence, and bleeding from the nostrils. At autopsy the tumor was extradural, 11x6x7 cm., and extended from the olfactory bulbs to the pons and medulla. There was pressure on the olfactory and optic nerves. The third, fourth, fifth, and sixth nerves were embedded in the tumor mass. Part of the fibers of the seventh nerve were involved but the eighth appeared intact.

Alezais and Peyson: A woman of 68 noticed a swelling in the left superior occipital region but did not consult a doctor for about eight months. The tumor, then about the size of a large orange, was relatively movable in the transverse diameter and slightly in the vertical. She complained of pain in her neck, referred to her shoulders and between the scapulae. The tumor was removed and at operation a perforation of the occipital bone as large as a dime was noted. This was probed without any ill effects but no pedicle was found. The patient's symptoms cleared up entirely after the operation. Examination of the tumor showed a nodular mass, circumscribed by a capsule. Microscopic examination showed it to be a chordoma.

Feldman reported a woman of 46 who had a tumor arising from the sacrum and lying behind the rectum, producing pressure symptoms on the rectum. A tumor of the chordoma type and the size of an apple was removed by operation, but recurred and was again removed 20 months later. Two years after, there was a second recurrence which was inoperable and death followed.

Mazzia: A man of 54, who for 18 years had a slight amount of pain and feeling of discomfort in the sacro-coccygeal region, was operated upon. Removal of the coccyx revealed a tumor 17x8 cm., surrounded by a fibrous capsule. This was excised, but 19 months later there was a recurrence and a secondary operation with resection of the sacrum. A further recurrence at the end of two years was deemed inoperable.

Albert: In this case the growth of a chordoma apparently followed a fall as a result of which the patient, a man of 26, had his head

and back injured. He complained of an aching about the region of the coccyx which began to get worse at the end of nine weeks. Then, for the first time, the pain was accentuated on defecation. The tumor two-thirds occluded the lumen of the rectum and was not adherent to the vertebrae. Four months after removal, the tumor recurred and this time invaded the rectum. Three inches of the involved rectal wall were removed in a second operation but the mass again recurred, this time sooner than before. A colostomy was done but the patient died six weeks later—only 14 months after the discovery of the tumor. Examination of the mass removed at the first operation showed a tumor, 10x6x5 cm., of the chordoma type. The submucosa of the intestine was slightly involved in one area, but the muscularis was extensively invaded.

Curtis and Lefort: A man of 58 had had a tumor of the coccyx for four years. The tumor, 10x6 cm., lay on the anterior surface of the sacrum and coccyx and was removed along with the coccyx. There was a recurrence and death ensued two and a half years afterward. Histological examination showed tissue of the notochordal type with vacuolated cells predominating.

De Bernardi describes a case of what he calls "sarcomatous chordoma of the sacrum." A man of 56, who for two months had been troubled with pain in the sacro-coccygeal region, showed on examination an ulcerated tumor, extending from the anus upward along the sacrum. It was adherent to the sacrum, but not to the coccyx, although the lower part produced the most severe symptoms by pressure on the rectum. There was no glandular involvement and the tumor was removed without further recurrence. Grossly, the tumor was made up of two parts, an "intrapelvic" portion and a "retrococcygeal" portion. The intrapelvic portion was lobulated, soft, and gelatinous. This tissue was notochordal in type with vacuolated cells and a homogeneous granular cytoplasm. The other portion, united by a pedicle, was hard and microscopically showed sarcoma cells with many mitotic figures. There were also some notochordal cells within the sarcomatous tissue.

The case here mentioned is the 17th case to be reported. The clinical course of the tumor is similar to that of several others which ter-

minated fatally, although this patient is alive at the time of writing.

A white, single, female domestic of 30 entered the Massachusetts General Hospital on June 18, 1918, complaining of hoarseness, headache, and a swelling in the right side of the neck.

F.H. Negative.

P.H. No previous illness or operations. Cardio-respiratory, gastro-intestinal, and genito-urinary negative.

Habits. Occasional beer and wine, three to four cups coffee daily.

Present Illness. Three years ago the patient suddenly became hoarse without any apparent cause. The hoarseness cleared up in three days and there was no further trouble for a year.

Two years ago a severe headache developed and the hoarseness re-appeared. Both symptoms rapidly became worse. Eight months later an osteopath was consulted. While he was manipulating her head and neck she heard something snap in her neck. For 24 hours she was unable to turn her head. Two days later a swelling appeared in the right postcervical region. The osteopath tried in vain to remove the mass by massage. Tinnitus was noticed in the right ear soon after this and it has persisted.

One year ago the patient's right clavicle became more prominent and she was unable to lift her arm laterally over her head. The hoarseness continued, being accompanied by a productive cough, the sputum being more abundant in the a.m., but never bloody. The headache has never been localized, but always, as a feeling of increased pressure, has been more severe in the a.m. or on lying down. The mass in the right postcervical region has increased in size and has at times been painful. Partial deafness in the right ear appeared one month ago and the tinnitus increased. There has never been any vertigo. Recently she has been nauseated frequently and has vomited occasionally, more in the morning.

P.E. A tall, fairly well developed and nourished woman. Her voice is somewhat husky.

Neurological Reflexes. Pupils equal and regular, reacting normally to light and distance. Knee jerks, Achilles jerks, epigastrics, and abdominals present and normal. No Babinski.

Cranial Nerves.

I. Subjectively, some impairment of smell.

II. Right eye—vision normal. Examination

of the eye grounds shows an old choked disc with connective tissue changes. The choked disc has subsided somewhat, leaving the marked connective tissue changes. Left eye—Vision slightly reduced. Fundus shows slight papillary edema.

III to VI. Normal.

VIII. Right ear, hearing somewhat impaired. Loss of anatomical landmarks of canal and middle ear. Bulging in anterior inferior region of canal. Marked anaesthesia of drum. Left ear normal. Examination of static labyrinth negative.

IX. Right side of tongue is distinctly anaesthetic.

X. Complete paralysis of right vocal cord (recurrent laryngeal).

XI. Loss of power in right sternomastoid and upper portion of trapezius muscles, so that right trapezius drops and the clavicle is prominent.

XII. Atrophy of right side of tongue with limited motion of the tongue to the right.

Nose. Unobstructed. Septum intact.

Mouth. Upper teeth false. Lower canines and incisors present, others absent. Right tonsil large and depressed inward.

Neck. No glandular or thyroid enlargement.

Heart. Normal sounds, rhythm, and rate.

Lungs. Normal.

Abdomen and Extremities not remarkable.



FIG. 1.—Showing location of tumor, with scar of operation.

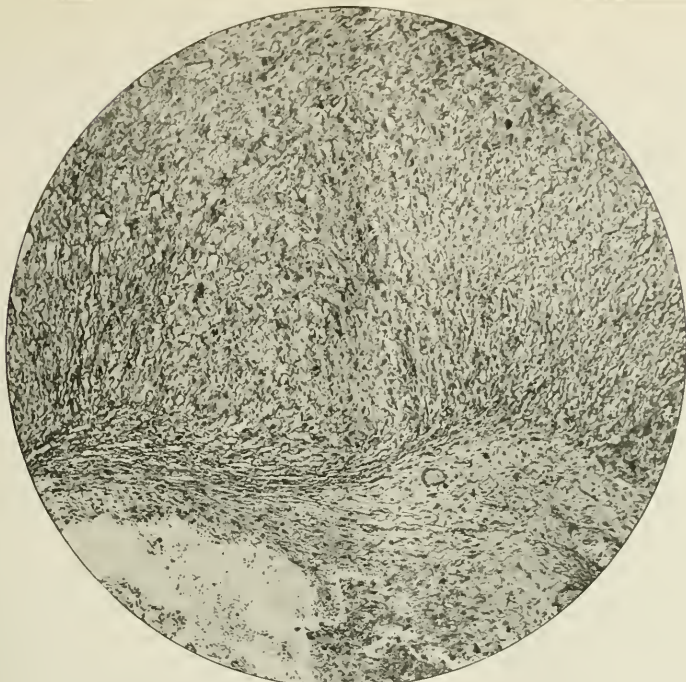


FIG. 2.—Showing the syncytial cell masses with large vacuoles and (below) the adult type of cells, $\times 100$.

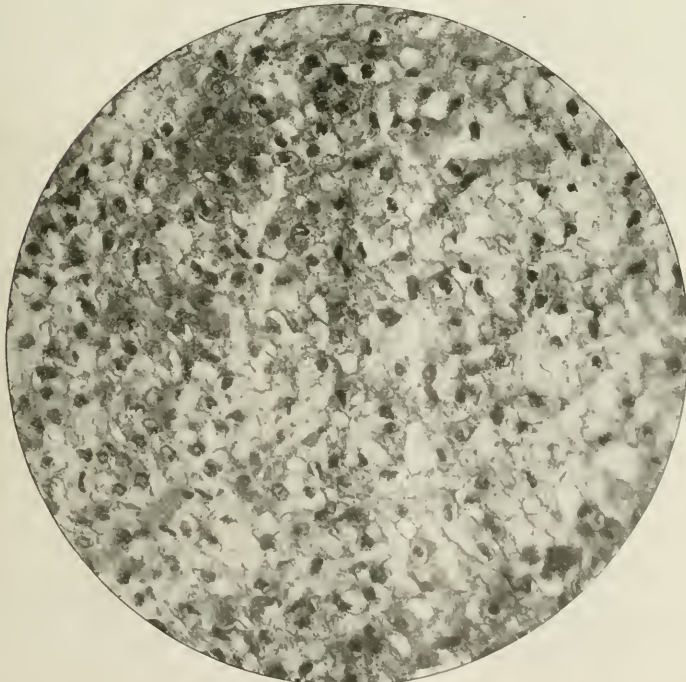


FIG. 3.—Showing the large cells containing vacuoles, $\times 500$.

Local. There is a tumor mass the size of a hen's egg behind and slightly below the right ear, extending downward on the neck and backward nearly to the median line. The mass is firm, non-tender, and non-fluctuant. The right ear is slightly pushed forward by the mass, as is the wall of the auditory canal. There is also pressure on the right tonsil.

OPERATION.

June 26. Dr. C. A. Porter. Ether anaesthesia. "Curetting tumor at base of skull." Incision made over growth and colloid like material curetted out with free hemorrhage. Curette passed upwards and inwards and large masses of material obtained. The greater part of the base of the skull was denuded and the base bone felt everywhere. Bleeding gradually ceased. Rubber dam wick inserted. Dry dressing.

Wick removed in 24 hours. Healing by first intention.

June 29. Patient has vomited for three days since operation. She coughs and then vomits and is unrelieved by gastric lavage or by medication.

July 1. The vomiting has ceased. Hoarseness remains as before operation.

July 10. Headache has entirely cleared up. No change in hoarseness. She has had two massive x-ray treatments since operation. Discharged relieved.

Seven months after the operation a letter from the patient states that her headaches have entirely disappeared. There is a recurrence of the mass in her neck and she has some pain. She has had five x-ray treatments. Her other symptoms are as on leaving the hospital.

PATHOLOGICAL EXAMINATION OF CURETTINGS.

Fragments of soft, friable, grayish white, somewhat translucent tissue, suggesting in its appearance and size the fragments of a hydatidiform mole. Microscopic sections from the fragments show a tumor, the cells of which tend to differentiate like those of the notochord. Much of its structure is of the embryonic type and resembles mucous connective tissue. It is composed of syneptial cell masses which often contain vacuoles with an abundant supply of homogeneous, blue staining, mucinous-like, intercellular substance. Other areas resemble the

adult structure of the notochord and show large cells containing vacuoles of various sizes. There are various intermediate forms of cells between these two types.

SUMMARY.

1. Remnants of the notochord are frequently found at post-mortem without having caused clinical symptoms.
2. 17 cases of tumors of notochordal tissue which have given clinical symptoms are recorded. 12 of these are over the upper end and five over the lower end of the neural canal.
3. Two of the 17 cases have been successfully operated on. Death followed in the others.
4. The case cited is the 17th case of chordoma. Although still showing involvement of several cranial nerves, the patient is still alive.

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THE CANCER PROBLEM.*

BY FREDERICK BRYANT, M.D., WORCESTER, MASS.,

*Röntgenologist to the Lynn Hospital, Consultant
 Röntgenologist to the Milford Hospital.*

My purpose in attempting to discuss the great economic as well as medical problem of cancer is not that I have any new knowledge to offer, but that I may be able, from a review of the literature and from recent communications from some of our most prominent workers, to bring the entire subject before you in an up-to-date summary, that it may be of service to you who have neither the time nor the opportunity to study minutely this baneful disease with which you must daily deal. As there are many laymen present, I shall, purposely, seek to avoid technical phrases and confine myself to more pleasing and popular language.

* Read before the Thurber Medical Society of Milford, Mass., April 3, 1919, but subsequently divided into two papers, viz.: "The Cancer Problem" and "Radio-therapy."

Cancer is as old as the Pyramids. All mankind, both king and slave, has known its nauseous and painful spell. One hundred and eighty years before Christ, Leonidis described retraction of the nipple as a diagnostic sign. Hippocrates, Celsus, and Galen, all had knowledge of the malignant disease.

An army of brilliant, faithful men—some of the masterminds of our art—with ample means and material at their command, have labored for years with the cancer problem. After a review of their various theories and conclusions, I am presenting the facts which are pretty much agreed upon.

As far as we know, cancer is neither hereditary, infectious, or communicable. Mid-life, or from forty-five on, is the cancer zone. This is the time when body growth is fully established. It is the hilltop of the journey of life. The perfect physical balance and the poise of youth no longer avail. The intake now exceeds the output. Habits become more sedentary and the emunctories less active. It is a zone of lowered resistance, for the slowed-up metabolism begins to display the affections of imperfect oxidation and hypernutrition. Hence it is that cancer is found rather more prevalent among those of easy circumstances and those subject to gluttony and indolence.

At this susceptible and unhealthful period some form of chronic irritation prevails. In a general way this may refer to improper habits of living, and in a more definite sense to a cragid tooth or a broken or ill-fitting dental plate as of the tongue, or the hot pipe stem as of the lip, or a pigmented mole as of the skin, or tranna as of the breast, or excessive hot drinks as of the stomach, or an ulcerated cervix as of the uterus, or a combination of circumstances and influences, or it may be undeterminable.

This constant or intermittent irritation, acting on a normal body cell in a pliant, non-resistant stage in its life cycle, causes an inherent alteration in its nature. It ceases to be in harmonious function with its fellow cells. It becomes lawless, for it no longer respects the rules and regulations which govern normal tissues. It does not seek to dissuade other cells to join its lawless band, but it rapidly procreates its own kind, and thus an embryonic tissue develops, pressing in every direction with ever-increasing bulk, thereby rendering the resisting tissues enfeebled by anemia till they

yield to the unequal combat. The invasion goes steadily, and at times rapidly, on to malignant victory, aided and abetted by the channels of lymph and the rivers of blood.

Nor is this the entire story of disaster. This lawless cell receives aid from without. Whatever acts against general health and thereby lowers the resistance of the resisting cells gives the invader succor. Among these we may briefly name in a general way, bad hygiene and ventilation, excesses of all kinds, alcohol, syphilis, and tobacco. Something in our way of living gives aid, from without, to the development and growth of cancer, for its increase seems to keep pace with modern civilization.

The vandal aid must receive aid from without, because it is of itself a weakling and by nature deficient, for it requires only one-half the amount of radiant energy to destroy it utterly that it requires to prostrate the normal cell. It is, therefore, only when from one cause or another, or a multitude of causes, that the resistance becomes lowered that this cell is able to exercise its pernicious nature and set out in its mad career.

In the space allotted I shall not attempt any differentiation between the varieties of so-called cancer of different degrees of malignancy. The hard and fast line, formerly drawn between benign and malignant growths, no longer prevails. The attempt is no longer made to separate the sheep from the goats, for it is safer to call them all goats and be done with it. Why, then, be inquisitive? Why seek knowledge that may give a false sense of security when the obtaining of this useless knowledge jeopardizes the life of the patient? A new surgical commandment has been written—"Thou shalt not touch Nature's resistant wall." Some surgeons have now come to regard the once pervading custom of removing a portion of the cancer or curetting the bleeding uterus for histological examination as attended with peril, because it opens Nature's resistant and protecting capsules and gives the desired opportunity for metastasis along the lymph and blood channels. The benign growth is no longer regarded as trustworthy, but as a suspicious character to be taken into custody before it becomes guilty of that grave misdeed—malignancy.

To discover the invading cancer cell early has been called "the heart of the cancer problem." An almost world-wide propaganda has

been instituted to inform the people of an early recognition of precancerous symptoms, and physicians have been urged to be more on the lookout and quicker to act even while danger lurks afar off. The fruition of these teachings has not yet appeared, for while all other diseases are perceptibly on the decline cancer seems, to many observers, to be increasing the world over. Eighty thousand, annually, in our own land, fall victims to this vicious cell. The fiendish mystery of stench and pain suffered by these victims clothes these figures with horror.

As an evidence of the difficulties attending the propagation of this vital knowledge, I relate the following pitiable but startling facts. In a series of investigations into the history of inoperable cases, it was found, in 400 such analyses, that the patient waited, on an average, 14 months after the cancer was visible before consulting the family physician; and he, in turn, waited with this same visible cancer under observation an average of thirteen months. In these cases the lawless cell had had at least three years to run its wild riot unchecked, yes, unopposed.

In the early days of my practice, I was called to attend a fleshy, middle-aged lady. That day her husband, scenting a nauseous odor, was about to call a plumber and investigate the cause, as the stench could no longer be endured, when the wife disclosed the fact that she had suffered, in silence, two years with a hideous cancer gnawing at her vitals. In six months time she paid the full penalty of her reticence and delay.

How do such things happen? If you extend this query to the cases cited above, a very few will tell you that as there was no pain they thought there was no peril. An equal number will tell you that the dread of an operation alarmed them to such a degree that they elected death. But the great majority will tell you that, from the very first, they believed themselves hopelessly doomed. "Mrs. Smith had a cancer, went to the hospital, had a terrible operation, and came home to die. What is the use?"

We are forced to the conclusion that the great majority of these cases would have been discovered while the door of escape was yet somewhat open, had they known the truth that cancer is, at the first, a local, or possibly a regional disease which, if discovered early and

thoroughly removed in conjunction with thorough radiation, a complete cure can be confidently expected. When the public is fully educated to the truth, that it is the delay that kills, that procrastination is not only the thief of time, but of life, and when the family physician fully awakens to the fact that it is fatal to delay, that precancerous symptoms should engage his attention like appendicitis or an acute infectious disease, then, and never till then, shall we prevail against our common enemy.

In the cancer zone especial attention should be directed to improved ways of living, as, for instance, less food, more sleep, and more living in the open rather than in the densely populated centres. The physician and patient alike must watch for symptoms of all forms of chronic irritation, and when found seek their removal. All growths, of whatever description, should receive attention. A few unnecessary operations will be, by far, overbalanced by the great common good. Chronic ulceration of the cervix or eczema of the nipple should receive proper care. A continued loss of weight calls loudly for thorough search. Repeated attacks of indigestion should be investigated by the roentgen ray. Carmen reports the case of a cancer of the stomach discovered while the size of a cherry. If an error is to be made let it be made on the safer side. It is of little consequence mistakenly to regard a harmless symptom as a possible malignant signal, but it may do the patient irreparable damage mistakenly to regard a precancerous symptom as unimportant.

Always beware of blood. Blood is not only the most flaring symptom but it is the most significant. Any bloody discharge from the month, urinary bladder, uterus, or rectum, may be of mighty and timely purport. If blood follows a douche, coitus, or an examination, question the cervix. If the flow is excessive, even before the cancer zone is reached, the cause should be sought and removed. If the patient displays a watery, slightly blood-tinged discharge, if she flows too freely in the cancer zone, if she flows inter-menstrually, if she starts to flow after the climacteric has been well established, malignancy should receive first consideration.

It is an unfortunate fact that there exists a belief, very prevalent among patients and to a very limited extent among physicians, that ex-

cessive flowing, in the danger zone, is one of the indications of the approach of the climacteric. We can excuse the misguided patient, unfamiliar with medical facts, for harboring such a delusion, but the physician should not allow himself to controvert the accepted meaning of a well defined medical term. This is never a manifestation of the coming of the so-called change of life, but should rather be considered as Nature's warning of the approach of danger.

"Beware of blood" should be framed as a motto and not only adorn the physician's office wall, but should be conspicuously hung in every home. Blood to the physician should be the red flag telling of impending danger, as the bell buoy telling of the unseen but perilous reef; as a beacon light which will not be dim while death shadows obscure the fate; that he, of all men, the mariner of life itself, may not forget or forfeit his great trust.

The mighty efforts of pathology, therapeutics, and surgery, have been in vain to stay the annual piratage of "this captain of the men of death." The ultimate mortality of those once afflicted with cancer is estimated at ninety per cent. Under the existing conditions the surgeon admits that he has reached the limit of his possibilities. All forms of medication, one after another, "have had their little day and cease to be."

Is there no solution of this, as yet, hopeless problem? Is it not possible from the knowledge which has been already acquired and the agencies we have at hand, to place this dread monster, like tubercle and syphilis, in reasonable captivity, that it may no longer roam at large, seeking as easy prey those it may devour?

The most promising possibility seems to lie along the line of a combination of all our knowledge and agencies. The family physician, the patient, and the radio-therapist must come to the surgeon's relief and aid. In other words, I believe our only wise dependence is in skilled surgery reinforced by a public educated to the truth of the cancer evil, by the family physician made fully aware of the danger of diagnostic error and delay, and by the radio-therapist equipped and skilled in the use of the weapons which modern medical discoveries have placed in his hands. These discoveries combine and include two distinct agencies, both of which exert a powerful influence on the tissues of the body, namely roentgen rays and

radium. When properly applied and in sufficiently massive doses these radiations exert a distinctive effect; first, upon the nucleus of the lawless cell, more especially and more powerfully when this cell is youthful and undergoing division, of inhibiting its power of proliferation. Later it becomes irregular in outline, granular in substance and finally disappears. At the same time the body of the evil cell presents stages of softening or liquefaction followed by necrosis and atrophy and finally follows the fate of its nucleus and disappears. This destructive process is made possible because the cancer mass is a low grade embryonic tissue much more easily destroyed than the more resistant normal structures. Simultaneous with this destructive process there is a definite stimulation of connective tissue proliferation, and by a due process of repair Nature replaces the cancer mass with fibrous tissue. The great advantage of this form of treatment is the possibility of destroying the malignant without injuring the normal cells. These results presuppose that the cancer cells are so located that they are within easy reach of the extreme dosage of radiation. Unfortunately, this is not always possible.

When the lymphatics, the paths along which the evil cell migrates or spreads, become malignant, it is next to impossible for the most skilled and extensive surgical operation to remove them all; but by radiation we have a means for their destruction: and if the unaffected lymphatics lying further out be subjected to a full inhibitive dose of radiation, a similar fibrous repair takes place and the glands become sclerosed, so that instead of presenting easy channels for invasion, mountain fastnesses now bar the way and say, "Thou shalt not pass."

I believe a mistake has been made in not combining, in a routine way, both these radiant energies and thereby doubling their efficiency. Radium possesses the advantage of actual contact to the tumor mass and is most adapted to the cavities of the body, as the mouth, oesophagus, or uterus. The roentgen rays easily cover large superficial areas and become an admirable agent in scouting metastases. "Radium applied locally, supplemented by roentgen rays to the adjacent tissues, gives the ideal form of radiation. A combination of both, carried out scientifically, seems the practical method and should cure more advanced

cases than either alone." Radium in this combination enables one to cross fire from within as well as from without. The failure to combine these equally useful and effective agencies at home accounts for the better reports which come from abroad, where one form of radiation is never used alone.

Some surgeons, in various parts of the world, are beginning to make use of radiation both before and after operation, to reduce the malignancy and to seal up the lines of metastasis, believing that this method gives the greatest promise of ultimate recovery and permanent cure. In substantiation of this I quote the opinion of a group of men who had the longest and largest experience in profound radiation. I refer to the clinic at Freiburg where the noted surgeon, Gauss, speaks in strong terms of their results with radiation. A renowned surgeon once said in his clinic, "When you find a cancer of the cervix, run away." We no longer run from cancer, even in its most hideous manifestations, for in these extreme inoperable cases, abandoned and without hope, shunned and avoided like lepers, radio-therapy has achieved most brilliant results. It has demonstrated in these pitiable sufferers, to the entire satisfaction of all observers, that it has a tremendous potency in reducing malignancy. When one of these pained, foul, bleeding, human derelicts is profoundly radiated, a transformation akin to miracle takes place. The pain at once ceases, and the habitual morphine can be removed. The hemorrhage stops. In this instance, radium seems to be a specific. "The endothelial cells of the intima degenerate rapidly, the lumina of the vessels retract, resulting in a speedy obliteration, and consequently the tumor cells cannot obtain the nourishment needed for their maintenance of life and for their proliferation." As a result, the ulcerations dry up and quickly heal over. The foul, offensive, penetrating, never-to-be-forgotten odor disappears. The general health and strength remarkably improve, for deep radiation seems not only to be able definitely to check or destroy toxic and debilitating absorption but it also unquestionably stimulates general metabolism. But more than this, the fact that these spectacular remedies are being applied, together with the quickly appreciable results, brings back, though long deferred, Nature's natural stimulants, courage, comfort, and hope, to replace despair and the contemplation,

amidst stench and pain, of the dark valley and the shadow of death. If this were the only hope and accomplishment of radiation would it not be eminently worth while? What more exalted remedy has ever been devised than that which is capable of giving these, the most abject sufferers, the most cursed victims of our race, a new lease of comfortable life, varying from one to five years, and very rarely ultimate relief? Many who have come to chaff at the radio-therapist, when he has undertaken to treat these hideous cases, have remained to pray.

Finally, as a befitting summary of this discussion, I will outline, in brief detail, a working scheme for coöperative hope.

First. The patient taught to recognize precancerous symptoms and that prompt action means life and that delay may mean death.

Second. The family physician, inspired by modern teachings to become as keen as a detective, as unbiased as a judge, and as prompt as a general, to suspect, diagnose, and act.

Third. The surgeon decides the case is operable. As an example, let it be cancer of the breast. He wisely hesitates, fearing he may precipitate rather than delay the evil end, for he knows from frequent and sad experience, that often the cutting into a malignant mass breaks down Nature's protecting wall and a local is converted into a general disease, or, in other words, he knows that an "incomplete surgical removal neither prolongs life, retards the progress, nor affords palliation, but rather hastens the progress." Therefore, he seeks radiation to render the cancer cell less malignant. This is not so necessary in the tumor mass itself as it is in the lymphatics around about which have become malignant, for their complete removal is attended with great difficulty. It is equally vital to radiate in a thorough manner the innocent lymphatics further out beyond the malignant advance to bar the way to the evil cell which may be let loose by the operation. Therefore, before operating, he sees to it that not only the cancer mass is deeply and profoundly radiated, but the outskirts, so as to kill the metastatic processes and close all the lymph channels leading outward which are as yet unaffected. The axillary, the supra-clavicular, the inner-mammary, the epigastric, and the mediastinal spaces are all, in turn, given the most massive roentgen dosage our transformers can afford. The surgeon then operates as

thoroughly as skilled experience dictates. In some instances tubes of radium have been sewed into the wound for a period of full dosage. As soon as the time limit for another radiation has expired the entire wound is again radiated and, as before the operation, now again the outlying lymphatics are to receive another dose. The patient is monthly inspected and at the slightest provocation is again thoroughly radiated, and so on till all signs of malignancy have entirely disappeared. This thorough method of radiative treatment has been in practice for so brief a period that the results cannot, as yet, be tabulated, but so far as my limited experience goes, and as far as I have been able to learn from others, these adequately radiated cases have less frequently suffered a return of malignancy.

Fourth. The surgeon decides that the case is inoperable. The sufferer's only hope now rests in radiation. The radio-therapist is now the last resort. He must fight the well-nigh victorious foe single-handed and alone. But, thanks to that immortal quartette of radiation fame, Crookes, Roentgen, Curie, and Coolidge, we find in his hands an armamentarium of unexpected value. For has he not at his command the radium howitzer belching forth its fiery projectiles for almost countless centuries capable of perceptibly piercing twelve inches of solid iron? For has he not at his command the roentgen machine gun—the Coolidge tube, capable of continuously sending hard and destructive rays into the deep recesses of malignancy?

We have seen only the beginning, but we fervently believe that, with accumulated experience, improved methods, and a better conservation of radiant energy, accompanied by the faithful and untiring American inventive art, the day will come when the radio accomplishments of today, wonderful as they are, will fade like an idle dream, because of their comparative insignificance.

Then let us hopefully unite, the patient enlightened as to the more healthful ways of living and forewarned by a knowledge of the early symptoms of malignant disease, the physician quick to discern and apprehend the danger, the surgeon skilled in his art, wisely choosing as his handmaid those radiant potential energies that the work of his hand may have greater permanency and blessed end.

ROTATION DEFORMITIES.

By CHARLES LE ROY LOWMAN, M.D., LOS ANGELES, CALIF.

IN my study of the effects of leg rotation on the foot I have followed out the idea of correcting weak, pronated, and flat feet by attention to two chief factors: (1) control of the whole leg lever, and (2) correction of the torsion deformity of the foot. I have found that certain cases, although quite flexible, could not be made to use their feet in proper relation to the legs. When the knees were flexed in the normal plane (see Fig. 1) their feet would be averted



FIG. 1.—Knee slightly flexed forward touching the plumb line.

and toe out. When these feet were held in vorns by using Thomas heels, muscle strain would be relieved but the anteroposterior axis of the feet would not coincide with the axis of knee action and a certain amount of uncorrectable out-toeing remained. If, by determined effort on the part of the patient, the feet would be used in the straight position, it then became apparent that the inward rotation of the thigh was still present, the knee action being in a plane inside the anteroposterior axis of the foot and the inward rotation in the hip joint being in direct relation to the foot position (see Fig. 2).

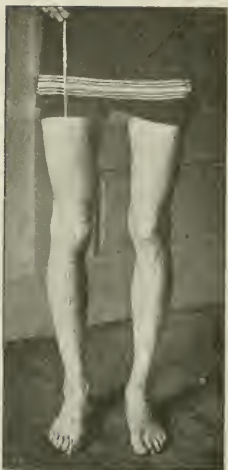


FIG. 2.—Foot used straight. Knee thrust directed inward.

This condition of torsion in the long axis of the leg is one which we have been studying since 1908. Our efforts to control the high rotation have been first to correct or lessen the degree of rotation by raising the inner border of the foot and throwing the heel in varus, and second by taking the twist out of the forefoot. This necessitates follow-up work and is accomplished in flexible feet by adducting the forefoot or checking its abduction. This is done by lowering the arch brace under the cuneiform and the first metatarsal, which allows the lacing of the shoe to exert a downward and backward thrust while the fulcrum under the scaphoid and front of the os calcis controls the tendency to lower and pronate at those points. This reverse twist is aided by thickening the sole of the shoe under the fifth metatarsal shaft and head. It is a common practice by many orthopedic surgeons to thicken both heel and sole on the inner border. This throws the whole foot into varus and tends to prevent the correction of torsion in the forefoot. After tension on the rotatory apparatus is lessened, we attempt to strengthen all muscles and ligaments that prevent inward rotation, and to tone up all the muscular groups that connect the legs to the body, principally the piriformis, gemellus, obturator, and gluteal groups. This is just as important as to give corrective exercise to the intrinsic foot muscles. We feel that the control of symptoms and the return to tone and

strength of the muscles, in most foot strain cases, is brought about by the use of the legs and feet in corrected positions. The reestablishment of ligamentous and muscular balance thus brought about takes place in the femoropelvic structures. This is true not only in the rotatory mechanism but also in the local foot structures, and in cases of pronation with inward rotation.

Many cases have deviations not correctable to the normal plane of action, and I had felt that some radical procedure was necessary in these cases. In 1915 I visited Atlanta and found Dr. Hoke working on this phase of the problem, *i.e.*, the correction of skeletal alignment by osteotomies with replacement of the joints in proper relation one to the other. He was giving special attention to rotation deformities, *i.e.*, torsion in the long axes of bones. Here, then, was the explanation for the condition noted above as applied to the ordinary static cases of pronated feet with rotation of the tibia and resulting eversion. Dr. Hoke had applied this especially in infantile paralysis and club foot cases. In observing these cases I at once saw the reason why certain cases could not be controlled by braces but had developed foot and leg deformities in the best braces our skill could devise. Subsequent investigation and observations in some of our very best orthopedic hospitals and clinics demonstrated that the same conditions existed there. Many operated foot cases were relapsing because the rotation deformity had received no consideration.

The very best skill in transplanting tendons, doing astragalectomies, transverse sections, and such well known procedures, may be largely wasted if there has been no appreciation of the fact that the motion at hip or knee is not properly directed over the foot. During the three years that have passed since this enlightening visit to Dr. Hoke, I have done osteotomies to correct torsion deformities in the legs and feet with extremely satisfactory results. These have been done chiefly in paralytics, but the application of this method in cases of non-paralytic faulty foot and leg statics is what I desire to point out.

A careful study of postural defects in growing school children or in the adult foot cases will show that a high per cent. have the gravity line of the leg deviated inward. The thighs will be rotated inward, knees pointing inward.

calves outward, and ankles in valgus, feet pronated, and mostly in the out-toe position. From behind, the line dropped from the mid-popliteal point will not pass into the middle of the os calcis or in line with the tendo Achillis.

When standing, if the patient is requested to twist the thighs outward, the inner border of the feet will rise and in most cases, the mid line through the patella will then pass through the ankle to the interspace between the first and second metatarsal where it normally should be. Others, however, will not be able to bring the anteroposterior axis of the knee to coincide with the long axis of the foot. The foot straightens before the knee comes to its proper place and if the motion is increased to bring the knee in proper position, the foot is carried over into varus. (See Fig. 3.)



FIG. 3.—Owing to shadow under inner margin, the beginning varus of the heel does not show as plainly as we wished.

This is especially true in certain leg cases where there is a little more than the normal bowing of the tibia, to which is added a torsion deviation in its long axis. Another test will also unmask this condition. With patient seated, leg extended, knee exactly in the sagittal plane, bring the anteroposterior axis of the foot as well as possible into the same plane and ask patient to dorsiflex the ankle. He will be unable to flex the usual amount. Now let the foot relax to the toe-out position, and unless there is contracture of the tendo Achillis,

there is no difficulty in dorsiflexing ten or twenty degrees more than a right angle. Repeat the same motions passively and you will feel in the first instance a mechanical resistance and in the other, no resistance, but the rubbery stretch of the Achilles. Now note the axis of free motion of the ankle joint and compare with that of the knee. You will note from fifteen to forty degrees of outward rotation of the tibia, which is often unilateral and frequently differs in amount on the two sides. I have noticed it to be more common or to a greater degree in the right leg. The reason for this difference in motion at the ankle joint is that when the foot is forced into the sagittal plane the astragalus is held outward by the grip of the malleoli, and its passage backward during dorsiflexion is interfered with. The line of thrust should pass through the anteroposterior axis of the astragalus and if it does not, there will be a twisting thrust against the outer malleolus similar to the twist of a key wrench in a socket or slot.

This condition is far more common than one would think unless he begins to look for it. As I have never seen or heard of an explanation for its incidence I wish to offer some observations in regard to it. In ordinary static cases, beginning in babyhood before the arches have formed, the weight in many cases is borne too far inward. This is because of a slight degree of knock-knee, or an exaggeration of the normal tibial bowing which forces the thrust from weight-bearing inward.

When beginning to walk, babies use a very wide base with feet far apart and take short, rather stiff-legged steps. Practically all baby shoes are very wobbly. They are round soled and have the uppers improperly placed, with short back and high front seams, which induce the back-knee position. In crawling they frequently toe out and push with the inner border of the foot. It is not at all uncommon to see children from two to five years of age sitting on the floor or ground with the knees acutely flexed and heels opposite the trochanters. This position, by the way, is very common in paralytics, especially in double leg cases. The thighs (see Fig. 4) are forced strongly into inward rotation, the knees rest on the floor on the inner condyles, the inner malleolus is on the floor, and the foot is held strongly everted and pronated.

In using the pushmobile and kiddie cars, in



FIG. 4.

roller skating, drilling, gymnasium work, and dancing, the toe-out position is assumed.

Many parents being afraid that the early straight-foot position will lead to pigeon toes, continually urge the child to toe out. About puberty, girls put on narrow heeled misses' shoes, the inward inclination of the femur increases, and any potential weaknesses of the foot and knee structures are increased.

All of these conditions develop, or predispose to the development of the out-toe position. As the leg thrust in walking must be in the anteroposterior plane, we may consider that the resistance of the ground to this thrust is an active force, bearing against the inner border of the foot in the toe-out position. This force being transmitted through the foot to the astragalus in an outward direction acts like a key wrench in twisting the mortise of the ankle joint outward. This continuous twisting thrust against the short arm of the right angle made by the foot and leg, produces a torsion deformity in the tibia or stretches the knee joint ligaments and decreases their stability. As this condition increases it becomes impossible for the hip, knee, and ankle joints to work in their proper places; for instance, if the feet are placed or used in a parallel position the knee joints thrust inward and the heads of the femora rotate inward. Ultimately, this produces symptoms of joint strain manifested in adults by changes in the joint linings, *i.e.*, hypertrophy of the fringes, spur formation, and other osteoperiosteal changes.

These rotation deformities are seen in their more exaggerated forms in paralysis, club foot, or congenital hip cases; both produce outward

rotation of the tibia. I have already mentioned the common sitting positions which infantile paralysis cases assume. One rarely sees children with paralysis of several years standing without brace correction, in whom one or more of these rotary deformities does not occur. The outward rotators and abductors of the thigh are not affected as frequently as the other groups of muscles. They exert their force in holding the thigh outward and the trochanter backward. In walking, the weight of the body thrusts the knees forward and inward, and this combination produces torsion in the femur. The type of foot so commonly found in paralysis is one of toe drop and valgus. In walking the leg is swung forward to overcome the toe drop and is brought down in the toe-out position, which causes the rotation of the tibia as explained above. In varus feet, both the congenital and paralytic types, the forward thrust of the knee over the adducted forefoot increases the buckling outward in the mid-tarsal region. The backward thrust through the first and second metatarsals, cuneiform, and scaphoid, pushes the head of the astragalus backward with the resulting torsion of the tibia in the long axis.

In congenital hip cases, due to the dislocation upward and backward, the outward rotators and abductors become shortened, and the angle of the neck of the long axis of the shaft is changed, as pointed out by Dr. Russell Hibbs. Unless this torsion deformity is appreciated, many failures in their reduction result. This condition is undoubtedly exaggerated as the result of improper alignment in those cases which have walked, although Dr. Hibbs has asserted that he has noted torsions in cases before the walking stage.

This condition has probably been overlooked for so long because it does not appear as a deformity, whereas, a few degrees of knock-knee or bowleg is very apparent even to the layman. An appreciation of this condition in the routine examination of all leg cases and its correction when found, will result in increased success in restoring function and in corresponding satisfaction to the surgeon.

GIFT OF \$10,000 TO PETER BENT BRIGHAM HOSPITAL.—The will of Alexander Cochrane leaves \$10,000 for the establishment of a free bed at the Peter Bent Brigham Hospital.

NOTE ON THE ARTICULAR SEPARATION OF THE MIDDLE AND INTERNAL CUNEIFORMS WITH AND WITHOUT FRACTURE.

BY FREDERICK W. O'BRIEN, M.D., BOSTON.

THE following note has been suggested by a series of foot injuries seen at the Cambridge Hospital, Mount Anburn Street, during the war period, many of which were referred from the Watertown Arsenal. In all cases there was a question of fracture of one or other of the tarsal bones. Clinically, these cases presented the usual signs seen following a crushing blow.

In one case only out of some fourteen examined did we diagnose definitely a fracture of one of the cuneiforms, but in all of them was seen what we have characterized as an air space due to articular separation of the middle and internal cuneiform bones, well seen in type A, figure 1.

All cases did not present such a definite air space, but where the clinical signs with localized tenderness were pronounced and we obtained a roentgen plate such as is seen in figure 2 and called by us type B, we have not hesitated to report articular separation of the cuneiforms. That this type may not be real we are willing to concede, but have adopted it

for a working diagnosis until further observations made either by ourselves or others may confirm or refute it.



FIG. 1.—Type A.



FIG. 2.—Type B.



FIG. 3.—Type C. Fracture line limed for reproduction.

Type C, figure 3, where a definite fracture of one of the cuneiforms appears stands by itself. The point of this note is not to claim any originality but to offer these observations in the hope that they may help from a roentgen and clinical point of view to clear up some obscure and traumatic foot cases.

A study of the ligamentous and muscular attachments of the tarsus and foot mechanics suggests the thought that we have the articular separation of the cuneiforms more frequently than fracture of either of these bones because of the relatively weak interosseous ligaments, and because of the position of these bones in their relation to the arch.

The dorsal and plantar ligaments which connect the scaphoid with the cuneiform bones do not seem to be concerned. The so-called intercuneiform ligaments plantar and dorsal are directly involved.

The dorsal ligament consists of two bands of fibrous tissue which pass transversely and connect the middle with the external cuneiform. The plantar ligament has a similar arrangement as that on the dorsum. They are also strengthened by processes given off from the tendon of the tibialis posticus.

The interosseous ligament also plays a part and consists of strong transverse fibres which pass between the rough non-articular portions of the lateral surfaces of the cuneiforms.

Since the movements of the cuneiform bones are limited to a slight gliding upon each other, it seems fair to conclude that with such a definite air space as seen at least in type A, figure 1, we are dealing with a pathological reality.

Clinical Department.

HERNIA OF THE SMALL BOWEL INTO THE RECTUM.

BY A. T. DOWNING, M.D., LITTLETON, N. H.

THIS case is reported because it is believed to be a rather rare condition. Details will be given just as the problems presented themselves as the case progressed. The patient was a boy eleven years old, referred by Dr. Boynton of Lisbon. Family and previous history were both negative.

The present sickness began with sudden severe pain in the abdomen, accompanied by vomiting and prostration. The boy's mother, having had the experience of a large family of children, and supposing this an ordinary indigestion, did not call a doctor for several days. The second day the vomiting persisted and a diarrhea began, which soon became involuntary. This continued for about four days, when he was seen by Dr. Boynton and a diagnosis of probable peritonitis made.

Examination at the hospital five days after the onset of sickness showed three distinct features in the case: a marked general peritonitis, a severe acidosis toxemia, and an involuntary diarrhea with wide open sphincters.

The abdomen was extremely distended and very rigid, with dullness in both flanks, and very tender all over. Pulse was very rapid and weak and temperature was 97. Leucocyte count was 14,000. The urine contained no albumin, but was loaded with acetone. Lips and tongue red and parched, throat red, skin clammy, together with a dull and listless mentality, made a rather typical picture of a severe acidosis toxemia. The involuntary diarrhea with relaxed sphincters and acetone in stools was laid to the acidosis and no rectal examination was made. The boy was evidently very sick.

Having previously had an unpleasant experience with septic peritonitis complicated by acidosis, we hesitated about operating on this boy. However, the next day a leucocyte count of 16,000 decided for operation. Ruptured appendix seemed to be the best guess for the cause of the peritonitis, so a right rectus incision was made. The peritoneal cavity was distended with thin pus containing masses of fibrin and free fecal matter. The lower two-thirds of the abdomen was blocked by a tangled mat of adhesions, impossible to separate. In the pelvis the adhesions were so dense and the tissues so friable that even a reasonable examination was out of the question. The appendix was tied down to the brim of the pelvis, and had the appearance of an acute gangrenous inflammation, without any macroscopic perforation. There was no perforation in the cecum.

Conditions in this region could not account for the fecal matter in the abdominal pus. Adhesions were separated as much as possible, but

no break in the bowel was found. A left rectus incision was then made and drainage established on both sides of the abdomen. A pint of sterile solution of soda bicarbonate was given by hypodermoclysis during this operation.

Recovery from the operation was stormy, with much vomiting. There was a very free discharge of pus from both incisions and fecal matter from the right incision. The involuntary diarrhea and the relaxed sphincters continued. The acidosis cleared up satisfactorily. On the whole, he made good progress, with comparative freedom from abdominal pain for about fifteen days.

At this time there was loss of appetite, chills, and fever, with colicky pains in the abdomen. There was pain, tenderness, rigidity, and swelling just above the symphysis. A pus pocket was evident and incision was made over the mass. A collection of pus and serum was evacuated and drainage put in.

Up to this time the involuntary diarrhea and relaxed sphincters had been present all of the time. Rectal examination had been impossible, without an anesthetic, so this opportunity was taken to investigate conditions there. Well inside the internal sphincter muscle was found the lower end of a tumor about the size of a goose egg. This mass was hanging from the anterior rectal wall, and was high enough so that the point of emergence could be reached with difficulty. The surface of this mass was firm and pebbled, like the surface of an orange, and bled easily. There was nothing distinctive about the feeling, except that it was a little softer in the center, but it gave no suggestion of fluid contents or gas. There was considerable constriction about the base of the mass, giving almost the suggestion of a pedicle. We were unable to determine the nature of the growth, and the boy's condition precluded any further work at that time.

For a couple of days this operation seemed to give relief, but vomiting soon began again, and became distinctly fecal in character, with severe abdominal pain and distention. The boy's condition was extreme, with plenty of evidence of a pretty complete obstruction, and an enterostomy was decided on. A high median incision was made, over the only area where there was even a comparative freedom from adhesions. The freest loop of bowel was brought up and sutured to all layers, including the skin, and then opened on the top of the loop, leaving

the under side intact, thinking that perhaps some material might pass by if the obstruction should be relieved.

At this time another attempt was made to relieve some of the adhesions in the pelvis. This attempt was evidently successful, partially at least, for from this time on we had quite free movements, both by rectum and by the enterostomy opening. The vomiting and abdominal pain were promptly stopped and the boy's general condition improved greatly. He was able to take nourishment fairly well, and in a few days seemed beyond a dangerous condition.

We were still confronted by the tumor in the rectum, with relaxed sphincter and the involuntary diarrhea. After a period of ten days we decided to tackle the rectal tumor. This was again examined under ether and found, as before, with the lower end well up beyond the internal sphincter, and the body of the tumor very near filling the whole rectum. The whole mass seemed a little larger than at the previous examination. The fixation to the wall of the rectum was firm and only the extreme lower end could be brought into view. A heavy curved clamp was passed up next to the rectal wall over the narrowest part of the tumor. By this means the base was clamped and cut off. On removal, the tumor was found to be a loop of small bowel, very tightly constricted on the ends of the loop, where it passed through the rectal wall. The bowel wall was much thickened and was covered by a heavy coating of granulation tissue. The loop of bowel was not patulous, and was absolutely empty. The bowel was also sharply kinked in the center of the loop, making it seem impossible that any bowel contents ever passed through this loop after it became fixed in the anterior rectal wall. The clamp was left in position and removed after two days. After this the sphincter muscles regained their tone, and the boy regained control of his movements, which still continued both by rectum and by enterostomy.

The boy's general condition improved and he was able to eat and digest a rather generous diet. Conditions about the enterostomy precluded any further surgery for some time and he was left, hoping that he would gain some much needed flesh, while the tissues in the abdominal wall were cleaning up. The enterostomy loop must have been pretty high up on the small bowel, for the discharges contained much bright yellow bile and were very irri-

tating. He gained in strength, and was able to be taken out of doors, but did not gain much in weight.

After six weeks of waiting the abdomen was again opened and the loop of bowel freed from the abdominal wall. The enterostomy loop was resected and an anastomosis done. He vomited intermittently for several days but never persistently. He passed gas freely the first day after the operation, and there was no leakage from the anastomosis. Normal bowel movements were reestablished after a few days. There was considerable sloughing and discharge during the healing of the abdominal wound, but sound union after a time.

Just previous to the last operation, the boy added an interesting bit to the history. He told his mother that on the afternoon of the day he was taken sick he jumped from a high beam in the barn and hurt himself terribly inside, and that something came out behind, and that his small brother had to help him put it back.

The boy has made a seemingly complete recovery from his series of operations. He has been home a month and is getting about in a normal manner and having perfectly normal and regular bowel movements on a general diet. There were some problems in connection with the case that were never exactly figured out, for instance, just what happened in the abdomen to make possible copious movements, after a loop of bowel was incarcerated, and almost completely strangulated in a hernia. In the general sloughing and perforating process going on above, Nature must have provided some sort of a short circuit.

Operative procedures on this boy began in February, 1918, and proceeded over a period of three months. When he left the hospital he was able to eat and digest, with comparative ease, a pretty generous diet. He gained rapidly in weight and strength, with no serious disturbance in the movement of intestinal contents, and at the present writing, about a year after the last operation, he is apparently perfectly well, robust, and active as any boy of his age, and able to do hard work. He has no constipation, no colic, and no indigestion.

A CASE OF SUCCESSFULLY OPERATED WOUND OF THE HEART.

By E. GRANVILLE CRABTREE, M.D., BOSTON,

Major, R. A. M. C. (Harvard Unit); Surgeon in Charge of the Surgical Division of 22 General Hospital, France.

IN reporting this case I am keeping in mind the desire of Allied Army Medical Services to have available records of war injuries against the time of compiling the surgical history of the World War. At the request of Colonel Richards, consulting surgeon in the British Army for the Etaples district, I am recording this the only case of heart injury to reach our hospital; the twelfth, I am informed, in the British Army to reach operation; one of the four recoveries; and the only case of heart injury I personally have seen or operated. Private E. LeClair, a French Canadian in the Canadian Army, while in a trench watching an air battle between a French and a German machine on November 8, 1918, was struck in the chest by a spent French bullet.

The patient was admitted to 22 General Hospital on November 9. He was in good condition but complained constantly of a scraping, sharp pain in the region of his heart and had an evening temperature of 100 degrees. Pain prevented sleep. The entrance wound, which was situated two and one-half inches to the left of the sternum between the fourth and fifth ribs showed a slight purulent discharge. Chest examination by Major Foster Kennedy showed "pericardial friction rub best heard directly over wound and over right border of pericardial dulness. There is also pleuritic friction localized to a small area below and inside the apex beat. There is no evidence of pericardial fluid."

Chest examination by Captain Wayne S. Ramsey made next day showed: "No increase in cardiac dulness. Impulse palpable in fifth space nipple line. Action regular, rapid, sounds of good quality. Pericardial friction audible over whole of cardiac area. No evidence of fluid. Chest clear."

X-Ray Examination: "Screening shows a rifle bullet lying somewhat obliquely in the heart shadow at a depth of 8 cm. below the skin of the chest. The bullet moves with the heart's pulsation. Plates show a moving shadow in the region of the left auricle. Pericardial shadow considerably enlarged. Chests clear."

In view of extreme pain, together with an infected pericardium, a drainage operation with removal of the foreign body, if possible, was determined upon.

Operation, November 13. Septic entrance wound excised and cleaned with 70% alcohol. Eight-inch curved incision to the left of and along the border of the sternum curving outwards along the sixth rib. Fourth and fifth costal cartilages and one-inch of each of the corresponding ribs resected. Muscle flap turned outward. One-half inch of left margin of sternum removed. The plural fold, which was found to have been traversed by the bullet about one inch from its margin, reflected carefully to avoid breaking up its recently closed bullet holes. Pericardium opened by a T-shaped incision to give access to extreme left side of the heart. Considerable thin pus escaped. An area of fibrin and adhesions found between the visceral and parietal pericardium on the extreme left surface of the heart near the junction of the left auricle and ventricle. On stripping the adhesion it was found to cover the entrance wound into the heart muscle. Stay sutures were placed in the ventricle. By this means the heart could be rotated towards the mid line. The bullet, which was found to lie tangent to the cavity of the heart but completely buried in the muscle, did not penetrate the cavity. Owing to sepsis the wound in the heart was not sutured after the bullet had been removed.

Incision in pericardium loosely sutured about rubber tissue drain to lower end of the incision. Muscle and skin flap sutured into place.

No evidence of pleural damage noted at time of operation. Recovery uneventful, save for collapsed left lung.

Patient was seen at Liverpool, January 21, 1919. He was walking about. He stated that he felt entirely well. A letter dated March 13, 1919, from his hospital, states that he has been discharged to Canada apparently perfectly well.

Book Reviews.

Diseases of the Nervous System. By SMITH ELY JELIFFE, M.D., Ph.D., and WILLIAM A. WHITE, M.D., Philadelphia and New York: Lea and Febiger, 1917.

This most excellent textbook, one of the very few in which diseases of the nervous system and the mental diseases are both really adequately treated, shows it has met with the reception from the medical profession which it deserves from the appearance of this second edition within two years after its first publication.

In this edition none of the excellencies of the first edition have been lost, and on the other hand, the chapter on the endocrinopathies has been entirely rewritten, and has resulted in one of the best summaries of our present knowledge of this most interesting and obscure class of diseases which has come to our attention. The authors have also added a great deal of matter in various parts of the book, giving some of the practical additions to our knowledge from the results of the many injuries of the nervous system, seen in the present war, and something of the methods of treatment evolved to meet their results. The large field of so-called shell-shock neuroses in future editions will need much enlargement even in a general textbook such as this.

Diagnostic Symptoms in Nervous Diseases. By EDWARD L. HUNT, M.D. 2nd Edition, Philadelphia and London: W. B. Saunders Co. 1917.

This little book, which has had a most favorable reception from the medical profession, gives briefly the essentials in its description of the various details of examination of the nervous system, and the significance of the results, and is especially well adapted for the use of teachers and students, or practitioners who do not see many cases of nervous disease.

This second edition has been much improved by the addition of an excellent chapter on vertigo, another on the very important examination of the cerebro-spinal fluid, which contains all the essential methods, and the significance of the results found, and a third, which takes up the rather difficult subject of spinal localization. Practically the only criticism that can fairly be made of the book is in regard to this chapter, in that while it is for the most part full enough and clear, hardly enough description has been given of the sensory distribution, especially of the spinal metameres, the skin areas corresponding to the segments of the cord. More space might also have been given to the explanation of conjugate deviation of the eyes, and the fact that the Achilles jerk is often lost in tabes, while the knee-jerk as retained has in some way escaped mention.

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OCCUPATIONAL THERAPY.

DR. HERBERT J. HALL, of Marblehead, Massachusetts, in his article entitled "Beside and Wheel-Chair Occupations," has summarized briefly the substance of a few of the lectures given to classes at the Boston School of Occupational Therapy. Some time ago the Surgeon-General's office sanctioned the establishment of schools for the training of reconstruction aides,—women who should be at least 25 years of age, and of suitable personality, to furnish forms of bedside occupation and to direct the handwork of disabled soldiers. The course as outlined includes weaving, simple woodwork, basketry, block printing, knitting, applied design, a certain amount of practice teaching and hospital routine, and methods of invalid teaching. It is not required that the young women shall become expert craftsmen, nor shall they be expected to prepare the men for a trade. The object of these simple occupations is to exercise the mind as well as the body. Work, of a suitable nature, is the best possible means

of restoring nerves and muscles to normal action.

Beside and wheel-chair occupations are now a permanent factor in military hospitals and the result of this kind of therapy will be seen in the work produced by the men. Some patients will be naturally clever, others awkward. But it is not so much the quality which counts,—“the reward is in the trying,”—and it often happens that through this means a man will develop a decided understanding of color, form, etc., which will later become the nucleus of a larger crafts system and thus the teaching in his case will of a certainty be justified. The first ideas which suggest themselves to one's mind at the mention of the word “hospital” are, medical and surgical treatment; but before long a third idea will present itself also, in connection with civilian as well as military hospitals, “rehabilitation.”

It has been found in every-day life, that mental attitudes react upon all functions and produce in some cases what we call fatigue. This condition is an important factor to be considered in the reconstruction hospital. The reconstruction aide, therefore, is taught that by a simple process of graded effort, regulated activity is to be encouraged. Keeping in mind this fact, the possibilities of the use of the small handicrafts are readily observed and the daily wave of strength and resistance is carefully taken into consideration with each patient. The time for bedside occupations will usually coincide with the hospital daily routine.

Unless favorable conditions for work exist, unless the patient be encouraged and made hopeful, no amount of striving will accomplish the desired result. This is especially true among patients handicapped by nervous exhaustion. The satisfactory accomplishment of some very simple task which may be assigned to him may be all that man needs as an inspiration for further effort. Everything is possible with hope and ambition for a foundation, and with those two comes a moral and physical reinstatement which is of inestimable worth. For this reason, the establishment of occupational therapy in civilian hospitals, asylums, and state institutions seems now almost inevitable after its successful employment in the military hospitals, and through this means we may expect many an inmate of a state hospital, the chronic invalid, and even the bored convalescent, to improve his mind and body.

THE ORGANISMS OF YELLOW FEVER AND INFLUENZA.

SCIENCE, in its issue of April 18, 1919, has taken from the *London Times* a note concerning the death of Major H. Graeme Gibson, R. A. M. C. Dr. Gibson, with his co-workers, Major Bowman, C.A.M.C., and Captain Conner, A.A.M.C., had just completed the discovery of what is very probably the causative organism of the influenza.

On December 14, 1918, the *British Medical Journal* published a preliminary note from these three doctors concerning the influenza germ, but at that time the discovery lacked complete evidence. Major Gibson's death, however, completes the evidence. He was a victim of the germ which he had tried so earnestly to identify, and pneumonia quickly followed this attack.

The germ belongs to the order of filter-passers. It is grown by the Noguchi method. Monkeys have been infected with it and have manifested hemorrhages in the lungs. The work of Captain Wilson, mentioned in a recent number of the *British Medical Journal*, also confirms that of Major Gibson. The fact that this important investigation has been carried on by the Army Medical Corps is a complimentary reflection on that service.

Following closely upon the success of Major Gibson's work comes the description by Professor Noguchi of a new germ in connection with yellow fever. He states that the organism which he has discovered belongs to the spirochete class. In the 17th century the disease was first discovered; and although it ravaged many European cities, it remained a mystery until 1881, when Dr. Charles Finlay of Havana declared that the infection was carried by the mosquito. Then, in the Spanish-American War, came Reed's commission of investigation and at that time Dr. Finlay's theory was substantiated, but with the sacrifice of many valuable lives. "It has proved that the mosquito *stegomyia fasciata* is the agent of infection, that the virus of the disease is present in the blood during the first days of infection, and that 'the germ is so small that it can pass through a Chamberland filter.' Infection could not be produced till after several days from the time when the mosquito had bitten the yellow fever patient, so that it was evident that the germ underwent some change in the body of

its insect host." This work enabled Dr. Gorgas to make possible the completion of the Panama Canal by ridding the zone, which up to this time had been a hotbed, of yellow fever. Professor Noguchi's declaration is an extremely interesting one, especially in view of the fact that it has been suggested that the spirochetes pass through two stages of development, one of which is extremely minute. However, whether or not this view will be confirmed, through the new discovery, has not been proved.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

IN a recent issue of *Campaign Notes*, the American Society for the Control of Cancer has published some suggestions to state and local committees for promoting public education in regard to the early recognition and treatment of this disease. The work of the Society is founded upon the following conclusions: (a) That cancer is at first a local disease, (b) that with early recognition and prompt treatment the patient's life can often be saved, and (c) that through ignorance of the facts and delay in seeking treatment thousands of lives are needlessly sacrificed, so that (d) the general mortality from malignant disease is very high and apparently increasing.

It is therefore urged that every available means be utilized for bringing before the attention of the public the fact that "in the early recognition and treatment of cancer lies the hope of cure." It is believed that the essential factors about cancer and prevention should be made known to the public, without, however, causing any unnecessary alarm. Probably the best means of reaching the public is through the special instruction of nurses, midwives, and social workers.

The Society believes that the state chairman should first of all utilize existing agencies. The State Department of Health and local boards of health should be urged to publish circulars, deliver lectures, arrange public meetings, publish newspaper articles, and provide free pathological examination of specimens in its diagnostic laboratory service. The Society relies upon medical organizations to disseminate modern knowledge of cancer among practising physicians; in this work, the American Society

for the control of Cancer is willing to coöperate by providing speakers and literature for professional meetings.

In every possible way, the American Society for the Control of Cancer is willing to coöperate with other agencies in making the campaign against cancer an effective one, and asks for the intelligent and earnest support of state officials, local committees, and the general public.

OPPORTUNITIES FOR DISABLED MEN IN THE OPTICAL GOODS INDUSTRY.

THE Harvard University Bureau of Vocational Guidance, for the purpose of making available information concerning possible openings for employment of handicapped men, has recently completed a report on the Optical Goods Industry which should prove of great interest to those whose injuries may require them to choose their occupations in a comparatively limited field. This report deals with the optical industry in general and should arouse enthusiasm among disabled men to seek employment in work of this kind.

Practically all types of handicap may be disregarded in this work except perhaps that of blindness and loss of fingers. The nature of the work, because of its cleanliness, attracts a high class of persons, the working conditions are attractive, and the work is light and variable. Monotony is a strong feature in promoting discontent among normal individuals and is therefore to be still more avoided with the disabled man. In the **optical industry** there is a variety of material to work with, and a variety of tasks. It is a growing industry, one which is in constant demand, so that the employment is steady. The trademark, "Made in America," has come to mean that the foreign market will be more promising than ever before for these goods and the increasing use of motorcycles and automobiles, throughout the world is a fair indication of the advantages which may be expected of the skilled worker in such a trade. The work is divided into three groups: the manufacture of lenses, the manufacture of frames, and the preparation of optical prescriptions. The inexperienced man can advance from one task to another as fast as his ability will permit. Some of the men who select this occupation will show natural adaptability for certain branches of the work,

and can make rapid progress. Defective hearing, loss of one eye, a leg, etc., will not interfere with efficient work; and the wages are so graded as to enable an intelligent, handicapped man to earn a satisfactory amount. The Federal Board for Vocational Education, The United States Employment Service, and the Vocational Training Division of Massachusetts Industrial Accident Board have in their hands reports of individual establishments engaged in the Optical Goods Industry.

THE MEDICAL LIBRARY.

IN an interesting address delivered before the Medical and Chirurgical Faculty of Maryland in April, 1918, Dr. John Ruhräh has outlined the historical development of the medical library in Maryland, and has called attention to some of the things such a library means to the profession and the public.

The earliest medical library in Maryland not owned by individuals was established in 1813 and consisted of several hundred volumes. The library of the Medical and Chirurgical Faculty was started in 1830 with an appropriation of five hundred dollars for the purchase of periodicals and standard books in medicine. Every year, two hundred or three hundred dollars was appropriated thereafter, and the library grew slowly but steadily, until in 1858, a building of its own was purchased by the faculty.

In discussing the value and meaning of a medical library, Dr. Ruhräh has quoted the saying, "To study the phenomena of disease without books is to sail an uncharted sea, while to read books without patients is not to go to sea at all." Books he designates as the charts of medicine, which are constantly corrected by each generation and gradually become more accurate. It is through the library that we keep with us the teachings of Laennec, John Hunter, and William Harvey. From the library shelves we can hear Hippocrates on malaria and mumps, or we may cross to Rome and listen to Celsus on surgery, Soranus of Ephesus on midwifery, obstetrics, or the diseases of children, or Aretaeus, the Cappadocian, describe pneumonia, tetanus, or diphtheria. Our journey may be endless and we may choose at will the best of the great souls who have labored in ancient and modern times for the progress of medical science.

NEW YORK DENTAL CLINICS FOR SCHOOL CHILDREN.

For the last six years special dental clinics for school children have been maintained by the Bureau of Child Hygiene in New York. A summary of the work accomplished by these clinics is published in a recent Bulletin of the New York Department of Health.

During the year 1918 the dental staff comprised one supervising dentist, nine operating dentists, eight nurses, and three dental hygienists. As it has been impossible to reach all school children needing dental treatment, it has been the plan to select children from the age of school entrance up to about ten or twelve years, as during this period the child's mouth is in a most transitional stage and work done will have the greatest effect upon the future. Necessary dental work in the mouths of children who are being sent away to preventoria because of predisposition to tuberculosis, is considered a most important factor in the program of these clinics.

The work done by the dentists in the clinics consists of filling, extraction, and operative treatment, together with such lectures and instructions as are necessary. The basic idea back of this dental work has been to carry home to the child the knowledge of what a clean, healthy mouth is, and the aid it is towards a healthy body. Children are instructed in the proper methods of keeping their mouths in good condition. At the end of certain periods, varying from six months to a year, all children treated are required to return for examination, in order to learn the result of previous instruction. It has been found that over eighty per cent. of these children need very little new attention. During 1918, a total number of 18,306 visits were made to the clinics.

THE USE OF YEAST IN INFECTIOUS DISEASES.

In the middle of the nineteenth century, it was believed that yeast could be used with successful results in the cure of furunculosis, anthrax, and diabetes, and in the treatment of diseases of the skin, suppurative processes, diseases of the respiratory passages, and gastro-intestinal diseases. In the latter

part of the nineteenth century, however, there came a reaction, and yeast was used comparatively little by the medical profession. In 1899, the therapeutic importance of yeast was again brought to the attention of physicians by the researches of Brocq.

At the present time, yeast as a therapeutic agent is again a prominent topic of interest. It is claimed by some that it can be used most successfully in treating gastro-intestinal disturbances, such skin diseases as acne, furunculosis, impetigo, and carbuncle, and in surgical conditions due to pyogenic organisms. Others have reported favorably on the use of yeast against infectious diseases. Yeast is being applied to many fields of therapeutic endeavor with apparent success, which can be confirmed only by the results which time can make certain.

MEDICAL NOTES.

LETHARGIC ENCEPHALITIS.—Lethargic encephalitis had manifested itself in many of our states since late winter. The United States Public Health Report for April 4, 1919, shows that during the month of March cases occurred throughout the country in small numbers. Such an outbreak in the United States is very naturally to be expected after the prevalence of this disease in Europe, but there is no definite means of knowing whether these cases are identical with the European cases. Because we are still in the dark concerning the exact nature of the condition, it has been deemed wise to make the disease a reportable one, and in the United States, California has taken the lead in requiring physicians to report their cases. In England the reporting of lethargic encephalitis has been made obligatory. Many are of the opinion that the stupor is a sequel to influenza and the widespread occurrence of influenza last winter would account for this idea. Therefore, for purposes of acquiring more definite information, it has been suggested that the disease be made reportable.

THIRD WAVE OF INFLUENZA IN ENGLAND.—It is reported in the United States Public Health Bulletin for April 4, 1919, that England has been visited by a third wave of influenza. This third wave has been very severe and is of much concern to the health authorities of that coun-

try. The number of deaths from influenza in England and Wales during December, 1918, and January and February, 1919, was very large. For the week ending March 1, 1919, 3,889 deaths were reported from 96 large cities. It is interesting to note that since the first week of September, 1918, the United States has also been visited by three distinct waves of influenza. For the week ending March 1, 1919, in this country, 2,382 deaths were reported from 35 large cities whose aggregate population was 20,000,000 in 1918.

AWARD OF CROIX DE GUERRE TO DR. A. F. THOMAS.—First Lieutenant Abraham Fifield Thomas, M.C., Ambulance Company, No. 1, Second Division, was awarded the Croix de Guerre on January 27, 1919, by the French Government, for distinguished service and gallantry in action during the battle of Blanc Mount, Champagne Sector, October 1 to 10, 1918. Dr. Thomas was born in Cambridge in 1888. He graduated from the Chicago College of Medicine and Surgery, served one year as interne in Cook County Hospital, practised medicine in Titusville, Florida, for three years, and served as railroad surgeon of the Florida East Railway and examining surgeon of the United States Pension Bureau. He made his home in Newburyport, Massachusetts, in 1916. Dr. Thomas is a member of the Brevard County and Florida State Medical Association, the Southern Medical Association, and is a fellow of the American Medical Association.

This award is not only an honor to the recipient, but reflects also upon the service rendered by the medical profession in the war.

GRATITUDE OF KING OF GREECE TO THE RED CROSS.—King Alexander of Greece has expressed his thanks to the American Red Cross for the work being done for the people of Greece. He recently visited the artificial limb factory which has been established by the Red Cross in Athens; the limbs are made entirely of American materials, and are designed and fitted by American specialists. King Alexander is reported to have praised particularly the work done by American doctors, nurses, and field workers in Macedonia and for their devoted efforts in checking the epidemic of typhus in Macedonia and the Greek islands. The agricultural survey of Greece being made by

the American Red Cross is of especial interest to the king, who hopes that American methods may be of value in increasing the productivity of the soil.

MEMORIAL LABORATORY AND CLINIC.—The Memorial Laboratory and Clinic for the study and treatment of nephritis, gout, and diabetes, was dedicated recently at the annual meeting of the California State Medical Society. The work of this institution was originally begun on Blackwell's Island, New York, to encourage research in chronic diseases; but it has been transferred by the Carnegie Foundation to the Cottage Hospital, Santa Barbara, California, under the directorship of Dr. Nathaniel Bowditch Potter. The new building, which will be devoted to the work of the Memorial Laboratory and Clinic will be ready for occupancy within a fortnight. The institution includes a hydrotherapeutic department, a cardiac room, equipped with the latest type of electrocardiograph, a complete modern diet kitchen, chemical, bio-chemical, bacteriological, and clinical pathological laboratories, and fourteen beds. Some of the ward beds have already been endowed so that free services and accommodations may be given to the deserving poor who reside outside of Santa Barbara.

JOURNAL OF DENTAL RESEARCH.—A prospectus of the *Journal of Dental Research*, a journal devoted to the advancement and dissemination of knowledge pertaining to the mouth, teeth, and their relation to the body as a whole, has been received. This journal will be issued quarterly, beginning with the March number; it is to be supported by an endowment fund; and it will be edited by eminent investigators in the fields of stomatology and dentistry, anatomy, anthropology, bacteriology, biochemistry and nutrition, endocrinology, evolution, hygiene, immunology, medicine, neurology, paleontology, pathology, pediatrics, pharmacology, and therapeutics, physiology, surgery, and toxicology.

Each volume will contain about five hundred pages of original research material. In addition, there will be supplementary pages devoted to the scientific proceedings of dental and stomatological societies. The *Journal of Dental Research* will aim to be of practical value to dentists and physicians.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 3, the number of deaths reported was 259 against 275 last year, with a rate of 16.95 against 18.34 last year. There were 42 deaths under one year of age against 34 last year.

The number of cases of principal reportable diseases were: Diphtheria, 31; scarlet fever, 42; measles, 15; whooping cough, 48; typhoid fever, 1; tuberclosis, 65.

Included in the above were the following cases of non-residents: Diphtheria 7; scarlet fever, 1; measles, 2; tuberclosis, 4.

Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 1; whooping cough, 1; tuberclosis, 24.

Included in the above were the following non-residents: Tuberclosis, 2.

Influenza cases, 48; influenza deaths, 10.

ARRIVAL OF MEMBERS OF DR. BALCH'S UNIT IN BOSTON.—Thirty-eight nurses, the last members to reach home of Unit Number 55, known in the Toul Sector in France as Dr. Balch's Unit, arrived in Boston recently and have been officially discharged from the army. These nurses were recruited from the Newton Hospital, the Anna Jaques Hospital of Newburyport, and the Massachusetts General Hospital. The entire Unit was composed of seventy nurses and thirty-five doctors. The surgeons were under the leadership of Dr. Balch, and the medical division was in charge of Dr. Daniel M. Hoyt. Miss Jessie Grant of Boston was the head nurse of the Unit. The only nurse of the Unit who lost her life in overseas service was Miss Grace Malloch, whose death was caused by influenza.

Obituary.

LOUIS WHITMORE GILBERT, M.D.

A RECENT issue of the *Evening Transcript* announced the death of Dr. Louis Whitmore Gilbert of Brookline, and a sketch of his life and activities was presented, but it is our desire to pay a tribute to a fine, loyal friend which shall be more personal than this newspaper account.

It is not often that one meets in civil life the

bitter fight against odds that brings out so splendidly the sterling personal qualities that this brave boy displayed.

Louis Gilbert has gone West,—and for no soldier who gave his life in the great war was there more glory in the going. For Louis was a soldier of the finest type the world produces. A silent, cheerful, patient sufferer, who displayed the same quality of calm courage each day of his long illness that the trained soldier has to have as he goes into action.

As he sat in his chair before the window from day to day, watching the slow but steady increase of his disease, and knowing almost to an hour when to expect the end, his always cheerful smile became more and more gentle, and the light in his eyes fuller of courage and sweetness.

It takes a brave man to sit calmly and watch the slow, steady, inexorable spread of paralysis, that he knows full well is daily bringing the end nearer: but Louis was brave—I believe there are none braver—and he never flinched. His cheerfulness was inexhaustible, his keen interest in the activities of his friends a pleasing thing to see. He never mentioned his own condition, except in response to inquiries as to how he felt, and then his reply was invariably, "Feeling fine." On the other hand, he always inquired about all his friends and what they were doing; his interest and his loyalty and his friendly inquiries were the pleasing things in conversation with him.

To those of us whose privilege it has been to know Louis Gilbert well and to have watched him through his long and trying illness, the memory of his courage cannot but be an inspiration every time we think of him, to some attempt on our parts to imitate him in our own lives. And if misfortune should ever come to us as it did to Louis, we can have no finer example to follow than his splendid one. Louis had many warm and loyal friends, whose pleasure it was to keep him supplied with books and flowers and cigars, and whose frequent visits were a source of greatest pleasure and satisfaction to Louis, who was in turn one of the most loyal friends a man could have. He spoke ill of no man, but always found some pleasing thing to say of everyone he talked of.

It was a strange fact, due, I believe, to Louis' wonderful personality, that those of us who went to see him with the idea that we were

going to cheer him up always came away feeling very humble in the presence of a courage so fine, and brought with us the realization that it was Louis who had amused and brought cheer to us; not we who had done anything.

Now that Louis has gone, we miss those little visits; something real, something so fine that it took us a long time to comprehend the significance and the magnitude of it, has gone out of our lives. We miss the smile that was a true benediction; the evident pleasure at the little attentions given him. We feel a definite and distinct loss, that one so brave, one so cheerful, one so calm in the face of trouble should have gone from us.

These words are poor things to tell of the fineness of Louis' spirit: one had, however, but to see it once to feel its force and its absolute mastery over misfortune.

A brave soldier, a loyal friend, a physician whose patients knew his value and appreciated his sound judgment, and his faithfulness, has gone forever. Our tribute to him is a silent and a deep one.

E. H. R.

Correspondence.

PRECAUTIONS IN THE ADMINISTRATION OF ARSPHENAMINE.

Treasury Department,
United States Public Health Service,
Washington, May 3, 1919.

Mr. Editor:—

It appears that there is a lamentable want of care on the part of many physicians who administer arsenphenamine, as to the concentration of the drug used and the time required for administration.

The Hygienic Laboratory receives many complaints in regard to untoward results from the administration of arsenphenamine made by various American producers. When careful investigation is made, it is almost invariably found that the drug has been used in a solution that is too concentrated, and that it has been administered too rapidly. We have reports of a dose of 0.4 gm. being given in a volume of as little as 25 cc. and injected within 30 seconds. Such practice is abuse, not use, of a powerful therapeutic agent.

If, in addition to the usual precautions as to the use of perfect ampules and neutralization, physicians would give the drug in concentration of not more than 0.1 gm. to 30 cc. of fluid and allow a minimum of two minutes for the intravenous injection of each 0.1 gm. of the drug (in 30 cc. of solution), the number of reactions would be very materially reduced. This would necessitate from 90 cc. to 180 cc. of the solution for the doses usually given and would require from six to 12 minutes for the injection.

Any physician who fails to observe these precautions should be considered as directly responsible for serious results that follow the improper use of the drug.

Hoping you may find space in your JOURNAL for this letter, I am

Respectfully yours,
G. W. McCoy, Director.

ARTERIAL TENSION: A REJOINDER.

Boston, April 4, 1919.

Mr. Editor:—

In answer to the letter from Dr. G. Van N. Dearborn in your issue of April 3, I beg leave to submit:

My appraisal of the importance of measurements of the maximum tension of the radialis may be justly understood by considering the facts which I have reported in my article in the BOSTON MEDICAL AND SURGICAL JOURNAL of March 6, this year. During the last five months I have been ready to give information regarding technic to physicians desiring it.

Dr. Dearborn offers for discussion the term "normal human blood pressure." This complex term can, of course, be described only by defining with exactitude one or more of the several elementary qualities entering into the complex mentioned; the minimum, the various intermediaries, the maximum at a distinct locality of the arterial system. My report in the JOURNAL of March 6 relates only to the maximum tension of the radialis, which can be measured only by instruments constructed for that purpose (any instrument constructed for that purpose). Confusion should not be made with the various intermediary values (between minimum and maximum) which are observed by means of the brachialis cuffs of different widths. There does not exist any constant equivalence between any of these intermediary values and the maximum. Each must be observed by its separate technic. The one of them can not be computed when the other is known.

In medical examinations, we are never so sure of our ground as when we make direct observation. Measurement of the maximum tension of the radialis artery (with the radialis arteriotonometer) is direct observation of a well defined biological fact. No one should give preference to values arrived at by computation or reasoning from less direct observation of fact that is less definable. Of course in this subject an observer who has had more experience can be of service to those who possibly may have had less opportunity. No one should think that I am not ready at any time to give of my experience in this matter to those who are willing to listen and to work.

It is only a question of locality (hospital) and formality. As for the formality, I am sure that Dr. Van N. Dearborn would not expect me to ring doorbells and solicit attention to one technic or another. Formality consistent with the dignity of scientific labor is the only condition *sine qua non* on my part.

Sincerely,

CLAES J. ENEBUSKE.

RECENT DEATHS.

DR EDWARD C. FROST, for many years a physician in Brockton, died on May 5. Dr. Frost was born in Sanford Maine, and was graduated from Dartmouth Medical School.

DR. FREDERICK RUSSELL STURGIS died in Boston recently at the age of seventy-five years. Dr. Sturgis was born in Manila, Philippine Islands, in 1844; he was educated in England, and later came to Boston and entered Harvard University. In 1867 he began practicing medicine in New York and became lecturer, and later a member of the faculty, of New York University. He retired from active professional life in 1912. Dr. Sturgis was a Fellow of the New York Academy of Medicine, a member of the American Medical Association, and of the Medical Society of the State of New York.

The Boston Medical and Surgical Journal

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Original Articles.

TEN YEARS' EXPERIENCE WITH THE MEDICAL DEFENSE ACT.

BY GEORGE W. GAY, M.D., BOSTON.

THE Massachusetts Medical Society through its medical defense act furnishes counsel, without expense, to such resident members of the Society as may desire his services in suits, or threatened suits for alleged malpractice. It is a species of mutual insurance, a protection against unreasonable and blackmailing suits. The Society pays no verdicts, or settlement charges.

The annual expense of the act to the Society has varied from zero to \$504, or a yearly average of fourteen cents per capita of 3600 members. The act has been in effect ten years. That it has given fair satisfaction is shown by the fact that at a recent meeting of the council a motion to suspend its action during the war was voted down almost unanimously. It has evidently come to stay, as it has in about twenty-five other state medical societies. So far as known to the writer, the act has never been repealed in any state. Having been responsible for its enactment in this Society, it may not seem inappropriate for me to present a brief résumé of the results thereof for the first decade of its existence. For the data herein given I am indebted to our faithful secretary, to whom all applications for services are made.

Ninety-four cases have been brought to the special consideration of the secretary since the act was enacted in 1908. Aside from these cases, he has been consulted frequently in relation to others that were suspected of giving trouble, but have thus far taken no definite shape. All applications for the services of our counsel are carefully considered by the president, secretary, and the counsel, who are in effect the medical defense committee of the Society. Upon their decision rests the action of the Society.

Twelve cases have come to trial. The verdict has been rendered for the defendant in every instance but one and in that a new trial has been granted. Thus far the Society has not lost a case. Nineteen suits are in the hands of our attorney, Mr. E. P. Saltonstall, some of which are dead and will never be heard of again, they having defaulted, become outlawed, or have been dropped. The others are active and may come to trial at almost any time. Applications for defense in 14 cases of threatened suits are on file with the secretary. In 19 other cases suits have been threatened, but thus far no applications for the services of our counsel have been received. Through the advice of

the defense committee a settlement has been brought about in 6 instances. Nine cases were defended by insurance companies and one by the defendant's own counsel, all without expense to the Society. Applications for defense have been refused in three instances, as they did not fall within the scope of this act, two being for libel, and one for alleged over-charge in a bill.

As might be expected, fractures head our list of complaints. There were 13 cases pretty evenly distributed between the upper and lower extremities. A more frequent resort to the x-ray and to consultations would undoubtedly improve the situation. A careful diagnosis, a frank prognosis with faithful, intelligent treatment are most essential in this work as the results are so plainly in evidence. Sprains and contusions, attending loss of function, should have little weight in the preliminary diagnosis of severe injuries. This is especially true in injuries of joints and their vicinity. Loss of function should always suggest a possible fracture. By reason of the unavoidable anxiety and uncertainty attending the treatment of fractures, many physicians wisely decline to accept such service. Those who do accept them must run the risk of suits, their only defense lying in insurance.

In ten instances the charge was mismanagement in confinement, one being a case of so-called "twilight sleep." We do not hear so much of this method of delivery as we did a few years ago. It would seem to call for especially careful management and good judgment to ensure safety, thus rendering it fit only for the use of experts.

In some parts of the country confinements are looked upon as being surgical in character and are often managed by the surgeon, as are ordinary operations, until the danger of septic infection is passed, when they are returned to the family physician to be cared for through the remainder of convalescence. The method has much in its favor; but for lack of time with a busy surgeon and other reasons, it will never supplant the present methods of procedure to any great extent in this vicinity.

The benefits of aseptic confinements were first demonstrated in New England at the Boston Lying-In Hospital by Dr. W. L. Richardson in 1885. In spite of the utmost care in the way of cleanliness, isolation, etc., septicaemia had been rife in that hospital for years, even com-

pelling its closure upon three occasions in their efforts to eradicate the scourge.

The introduction of asepsis has practically eliminated the infection.

Half a dozen cases of burns from hot water bottles or x-rays are on the list of charges, showing that preventable accidents are still in vogue, as they always have been. The human equation is always to be reckoned with.

Alleged unlawful commitment to an insane asylum, or detention in a police station, appears in four instances. In one of them it cost the defendants \$1600 to defend an action in which they had been assured that they ran no risk in signing papers detaining a drunken brute over night in the station to protect his sick wife and the nurse!

Among the numerous charges lying against our members, mention may be made of the following:—Improper treatment of Barber's itch; of scabies; of meningitis; of appendicitis and in everturing and suspension of uterus. For hernia following laparotomy; for failure to remove fishbone from throat; for transmission of scarlet fever; treating fractured hip as a sprain; wrong diagnosis of cancer of uterus; error in diagnosis of venereal disease (2 cases); specific infection of operation wounds (2 cases); libel on husband's character through diagnosis of pregnancy before marriage; for paralysis of arm from caustic treatment of cancer of breast; for a like result following similar treatment of nose; for necrosis from drainage of antrum through tooth socket; for vaccine treatment of acne; for operation on tonsils and adenoids; treatment of pelvic and uterine inflammation; pyosalpinx operation; prostatectomy; for death from ether; mastoid operation; for failure to detect a fracture; for a prescription having calomel written on one side and nux vomica on the other, both drugs being given to a moribund baby with fatal result (case settled).

Some of these cases were trivial, but however trivial, they must be met and disposed of, as they have a standing in law. Some were unjust, there being no grounds for complaint by reason of conditions for which the physician was in no way responsible. Others were blackmailing schemes brought to extort money by settlement, or to secure a verdict through enlisting the sympathy of the jury, or by contrasting the state of the poor with that of the rich, etc. Some were evidently taken on

"spec," others to gratify spite, or to escape the payment of a bill. In occasional instances there were just grounds for dissatisfaction. The physician through carelessness, neglect, or ignorance was at fault for the unfortunate results. For these cases there can be little excuse. They should be settled out of court. In fact, the only reason for their coming to trial is to secure more equable and reasonable damages.

The Society does not excuse or furnish defense for unjust causes. It expects faithful, honest service on the part of its members, together with at least such reasonable knowledge and skill as prevail in the community and are required by law. Given those qualifications, no physician can be held legally responsible for the results.

It is to be hoped that the time is not far distant when all first class medical schools will require hospital training as a necessary qualification for a degree and such facilities should form an integral part of the equipment. In no other way can the graduates of medical schools be better equipped to enter upon the practice of their profession. The public will be greatly benefited and the profession will occupy a higher position in the community than it has ever yet attained.

Two classes of cases of special interest appear in our list. They are the so-called social diseases and illegitimate pregnancies. A married woman consults a physician for venereal disease, not contracted from her husband. In due time he appears and wishes to know what is the matter with his wife; in short, he demands a diagnosis. What is the physician's duty under these circumstances. In court he may be compelled to give the diagnosis, the physician in this Commonwealth not being allowed to have "privileged communications" with his patients. The clergy and the attorneys are permitted to have them, but not the physician! He may be compelled to divulge his patient's secrets, however disastrous may be the results. Outside the courts the physician is his own master in this matter. In cases involving character, he should give his diagnosis to the patient and to no one else. It is the patient's property, bought and paid for and subject to his disposal. The physician has no right to divulge his patients' secrets except by permission of the owner, or by compulsion of the courts. He should protect himself carefully in

this matter. Several years ago a reputable physician in this vicinity was requested to examine a young man by the father of the young woman to whom the patient was engaged. The diagnosis was plain enough, but unfortunately for the doctor, it was given to the father as well as to the patient. The result was a long and vexatious trial for libel which cost the physician many hundred dollars. The verdict was a "whitewash" for both parties! Very likely all this trouble could have been avoided had the diagnosis been given only to the patient.

A similar rule of procedure may well apply in cases of pregnancy in unmarried women. Tell the patient and let her do the rest. The secret is hers and hence for her disposal only. It goes without saying that no wise physician would venture on a diagnosis in either class of the above cases, until he was able to back it up in court, or anywhere else. Until he can do that, he had better reserve his opinion. Additional safety lies in permanent notes taken at the time and also in consultations. True, the consultant renders himself equally liable with the family physician to an action at law in these cases, but he must assume this responsibility as a factor in the service. His protection will be alluded to later.

It behooves physicians to beware of hypothetical cases that may be submitted to them. Too often a sinister motive lurks therein. The applicants are very likely seeking grounds upon which to base a suit at law. A wise physician will give no opinion in such cases until he feels confident that no unjust use will be made of it.

Another shoal upon which the physician is liable to founder is impulse: forming an opinion and acting upon the impulse of the moment without giving due consideration to the situation. Not a few errors may be laid to this cause. A physician should have no impulses, or having them, he should hold them in firm subjection to the alchemy of reason. Thought should come before action, rather than later. "Minutes for thought, moments for action." The late Dr. Cheever, whose memory we all delight to honor, was a striking example of a cool, careful observer, a clear thinker and remarkably free from impulse. He was deliberate in arriving at an opinion, but once formed, he seldom had occasion to change it. He made few mistakes. He was dependable to an unusual degree, a fit example for present and future generations.

Dissatisfaction leading to suits is easily started. "Dunning with faint praise," thoughtless or vindictive remarks, jealousy, a desire to show superior knowledge and ability, all tend in that direction. A case has been reported to the writer in which a vexatious suit had its origin in the shrug of a rival's shoulders!

Mr. James Taylor Lewis says, "As I look over the past 20 years, I am convinced that a large percentage of these cases are brought purely for blackmailing purposes, and that most of these are begun because the family have had a lawsuit suggested to them either by a garrulous neighbor, or by the doctor who has been substituted, and who is apt to be careless in his talk."

The Medical Society of the State of New York has had a medical defense act in force since 1906. During that time several hundred cases have been tried and, according to a recent report, not a dollar had been paid upon a verdict for the plaintiff! Mr. Lewis, above alluded to, and the counsel for the Society, has had an extensive experience during the past 20 years in the defense actions for alleged malpractice. He has had an average of forty cases a year, twenty-five of which, on an average, have been disposed of and the others have been abandoned for various reasons. During this long period the cases lost at trial can be counted on the fingers of one hand. He attributes his success, "not to any superior knowledge of medicine and surgery, but to the enthusiastic support of truth-telling brother practitioners, who are willing to make sacrifices of time and energy in helping their confrères in honest defense."

"I have watched with a good deal of thoughtful care the development of organized defense against blackmailers in many states, and I am enthusiastic about the results which have been attained, not only in my own state, but in the sister states about us. It is remarkable what men of the great profession of medicine can do, not only look after the sick, care for the poor, and make personal sacrifices day after day, but also to show their willingness to make personal sacrifices in behalf of members of their own profession when they realize that ungrateful patients, advised by shyster lawyers, seek to rob the doctor, not only of his reputation, but of what few dollars he may have saved up for the support of himself and his family."

In the opinion of some eminent attorneys, it is unjustifiable for physicians to carry indemnity insurance, *i.e.*, insurance against verdicts. They claim that it is contrary to public policy for physicians to insure themselves against any action of theirs whereby harm might result to another person; also that it tends to make them less careful and considerate of their patients' interests. They admit that it is proper and legitimate for them to insure in the costs of their defense, but not in any damages that may be awarded by the court or the jury. They should be compelled to pay those out of their own pockets.

In view of the outrageous verdicts occasionally rendered by juries against physicians in suits for alleged malpractice, the above objections to indemnity insurance do not appeal to the profession. They do not seem valid, nor in accord with common sense. They seem academic, rather than practical. Physicians fail to see why they may not insure against blackmailing verdicts, as they may against fire, burglary, or any other calamity. That the fear of a suit will cause a physician to be more careful and considerate in the care of his patients is open to doubt. The fault is more likely to be a constitutional defect, indicating that perhaps he had made a mistake in his calling. Furthermore, it is to be remembered that the interests of the patient and the physician all lie in the same direction. Whatever benefits one will benefit the other. They are both aiming for the same object, the safe and speedy recovery of the patient. No physician fit to practice his profession is going to subject himself to the vexatious experience of a trial if he can possibly avoid it. He means to do his best for those who employ him. Having done that, having exercised due care and skill as required by law, he can hardly be blamed for seeking protection against the machinations of ungrateful patients and shyster lawyers.

While the consulting physicians and surgeons are seldom morally responsible for the results of the treatment, yet they are held to be legally responsible, as is the regular attendant. The action is very apt to lie against the party having the largest bank account. The only financial protection against damages for any practitioner lies in indemnity insurance. Few, if any, state medical societies furnish this protection, thus necessitating a resort to the insurance companies. The cost is moderate and

the service is desirable. It is true that this practice may tend to encourage suits with the expectation of securing a settlement, yet it is difficult to see how this is to be avoided under the circumstances. Self-protection will naturally take precedence of any argument yet advanced in opposition to indemnity insurance.

Formerly the opinion prevailed in certain quarters that the only asset of membership in the Massachusetts Medical Society consisted of an indifferent annual dinner. It was not true then and it has still less justification today. Aside from the camaraderie, which is no trifle, and the standing in the community and in the courts attending their membership, they receive one of the oldest and best medical journals in the country and for a decade have received and now have the service of a mutual insurance against unjust suits for alleged malpractice. Surely the present conditions can hardly be considered a one-sided contract. On the contrary, it would seem to be fair, if not generous, and to justify a membership of 5,000 rather than one of 3,600.

THYROGLOSSAL TRACT FISTULAE.

BY WALTER C. ALLEN, M.D., CHICAGO.

ANOMALIES associated with the vagaries of the thyroglossal tract cannot be called common, yet one hesitates to call them rare. Their occurrence, however, is so infrequent that one is apt to diagnose them as abscesses about hair follicles, branchial cysts, tuberculous sinuses and boils, unless one is fortunate enough to remember the dogmatic teaching in the course of surgical diagnosis in the medical school, that all cysts and fistulae occurring in the median cervical area are to be considered as of thyroglossal tract origin until proven otherwise.

It would seem that the clearest presentation of this matter is given by Mayo in the Collected Papers of the Mayo Clinic for 1911, by Eisen-drath in his *Surgical Diagnosis*, and by Andrews in *Keen's Surgery*. Unfortunately, most textbooks and medical papers either inadequately treat the fundamental embryological data which make the thyroglossal duct, as it is commonly called, important, especially in surgery of the thyroid gland, or else they neglect the matter entirely. If authors are thus remiss,

practitioners, certainly, are not to be greatly criticised if they call median cervical fistulae branchial cysts. It may be noted, in passing, that branchial cysts, as a rule, arise along the anterior border of the sternocleidomastoid muscle.

A case of thyroglossal tract fistula recently studied is presented:

CASE 1558:1919. H.F.S. Age 21. Admitted to hospital March 10, 1919, for operative treatment of median cervical fistula. Provisional diagnosis, fistula of thyroglossal tract. Patient noticed small mass the size of hazel nut just above Adam's Apple, for the first time, September, 1918. Mass gradually grew larger. In October, 1918, patient went to a local surgeon, who considered mass an "abscess about an ingrowing hair," and incised and explored it with forceps for a hair. Surgeon stated that he thought the abscess would heal up quickly. Patient states that a thick, white, cheesy material was expressed. Following the original incision, the fistula closed, but, in seven days, material reaccumulated, forming a small cyst, which ruptured spontaneously. From October to time of admission to hospital,—the cycle of spontaneous rupture—drainage—occlusion—cyst formation,—spontaneous rupture repeated itself at about five-day intervals. Patient stated that by pressing from above he could reopen the fistula and express the contents. Distention, he said, seemed to cause irritation and he would express the contents to relieve the annoying sensation.

Physical examination was negative except for the cyst and moderately enlarged thyroid, the latter accompanied by very mild symptoms of hyperthyroidism. As stated, the mass occupied the mid line of the neck, just above the thyroid cartilage of the larynx. An opening, the size of the head of a pin, temporarily occluded, was reopened with a probe. Material, such as described, was expressed. The mouth of the fistula occupied a little depression. The skin just above the opening was puckered. The mass was roughly oval in shape, extending upward toward hyoid bone. Probe could be inserted for 3 cm. Mass had doughy consistency, was not sensitive, and could be moved under the finger. The upper portion of the mass suggested a ligamentous prolongation in the direction of the hyoid bone. Operation was performed under local anesthesia. Transverse incision was made.

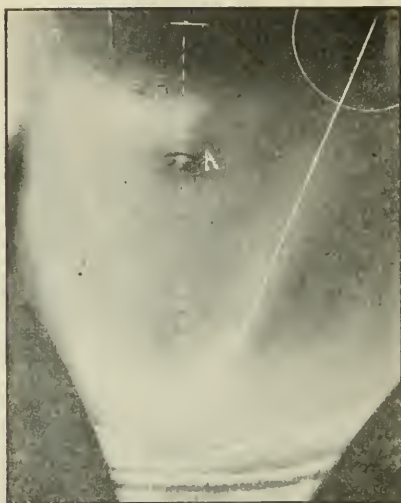


FIG. 1.—Persistent fistula of thyroglossal tract. Operation and cure. Long, straight line represents anterior border of sternocleidomastoid muscle; dotted line represents median line of neck. A, fistulous opening just above the thyroid cartilage of larynx—note puckering of skin—swelling extends upward toward hyoid bone; B, most frequent area for branchial cysts, i.e., along anterior border of sternocleidomastoid muscle.



FIG. 2. (Reproduced from Keen's Surgery).—Thyroglossal fistula. Note mid-cervical position and puckering about opening of fistula.



FIG. 3.—Persistent thyroglossal duct. Case of Lieutenant B. D. Parish, Medical Corps, U. S. N.



FIG. 4.—Rough sketch of thyroglossal tract fistula, based on Berany's case, showing the numerous invaginations characteristic of these fistulas. Caustics and cautery fail to cure and dissection is the treatment of choice.

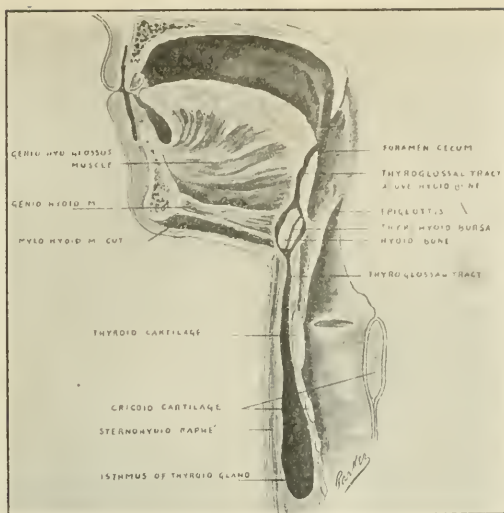


FIG. 5. (Reproduced from Keen's Surgery).—Thyroglossal tract and its relations.

The lower end of the mass was bulbous, the upper portion cord-like. The whole was dissected upward and the cord-like part freed from its attachment to the hyoid bone. Examination of sections of the tissue confirmed the provisional diagnosis.

What is the thyroglossal duct? In the first place, according to Butlin, it is not a duct, as it performs no such function, but should rather be considered as a tract. These thyroglossal ducts are embryonic rests or remnants. They represent anomalies of embryonic development.

These thyroglossal rests may be compared with the phenomena associated with the descent of the testicle. The processus vaginalis, as we know, may meet obstruction and cryptorchidism result, or the testis may properly descend, but the processus vaginalis may fail to form the tunica vaginalis testis and congenital hernia result, or, again, the tunica vaginalis testis may form normally, but the processus vaginalis may be imperfectly obliterated, so that congenital hydrocele of the cord arises.

The urachus, which, when the allantois is imperfectly obliterated, may give rise to cysts and fistulas discharging pus or urine at the umbilicus, may be compared with the thyroglossal duct in that, while the anomalies referable to the urachus constitute most of the conditions arising in the median line between the

symphysis and the umbilicus, likewise, a cyst or fistula arising in the median cervical line may practically always be ascribed to incompletely obliterated thyroglossal duct.

To get the proper understanding of thyroglossal cysts and persistent thyroglossal tracts, one must review the embryology of the thyroid gland. Three anlagen, comparable to the three lobes of the thyroid gland, are concerned in its development. The lateral lobes arise from anlagen, one on either side, which have developed from the fourth branchial furrows. These do not concern us in the consideration of the thyroglossal duct. The middle lobe arises from a superior anlage, which develops from the mouth or pharynx area, more specifically, from the tongue. The tongue develops in three portions. All that in front of the circumvallate papilla, the anterior three-fifths, is formed from a single median body. The posterior two-fifths of the tongue is formed in halves. At the point of union of these three portions, there appears a tubular depression with a bilobed anlage at its base, from which tissue the greater part of the mid portion of the thyroid gland is formed.

Minot points out a slender, hollow pedicle in the groove known as the sulcus arenatus between the tissue about to form the epiglottis and tuberculum impar, which develops later into the tongue. The obliterated upper end of this

hollow pedicle is later identified as the foramen caecum on the back of the tongue. It appears that the thyroid tissue descends from the mouth area in much the same way that the testes descend. The tube which develops in consequence of the descent of the thyroid is known as the thyroglossal duct, or Duct of His (whose researches developed this important fact).

The hyoid bone, which develops at the fifth week, crosses the line of the descending thyroid. Mayo states that forty per cent. of thyroids in their descent are entangled by the hyoid, causing a stringing out of the thyroid tissue to a variable degree. This descent and stringing out of the thyroid tissue accounts for the lingual, sublingual, accessory, and other forms of aberrant thyroids, and explains the occasional presence of thyroid tissue in the walls of thyroglossal cysts.

It is apparent that these medial cervical cysts and fistulas are distinct from branchial cysts and fistulas, with which they are sometimes confused. Being remnants of embryonic development, they retain their powers of generation and growth when operated upon unless every bit of the structure is removed. These thyroglossal fistulas sometimes open through a delicate foramen in the center of the hyoid bone, a fact which may explain why operation sometimes fails to cure in these cases.

The Duct of His is lined with temporary pharyngeal epithelium, and is probably a phylogenetic remnant of the excretory duct of the thyroid. Gaskill has shown that this duct persists in the sea scorpion and king crab, in which the thyroid, being a true sex gland, the duct empties into the uterus or genital tract.

In addition to median cervical fistulas and accessory thyroids, lingual dermoids may appear among the abnormalities associated with the vagaries of the thyroglossal duct. The case reported by Wellington Gray, often mentioned in the literature, may be taken as a classical example of lingual dermoid: this was the size of a lemon and practically filled the mouth.

A case in which the thyroglossal duct is patent from foramen caecum in tongue to isthmus of thyroid is not known. That portion of the thyroglossal tract from the foramen caecum to hyoid bone is known as the ductus lingulis, that portion from hyoid to thyroid has been called the ductus thyroideus. Most of the anomalies noted have arisen from the ductus thyroideus.

Sir John Bland-Sutton cites cases of lingual dermoids, which have been classified as arising from the ductus lingulis.

Woolsey's case is interesting for several reasons. In the first place, it is a classical example of one of these cysts of the thyroglossal tract arising in the mouth area, that is, between the hyoid bone and the floor of the mouth. In its sublingual aspect, it was the size of a small egg, and, in its submental aspect, the size of a small apple. The mass pushed the tongue upward and the patient sought treatment by operation because of difficulty in speaking, mastication, and deglutition. The mass was fluctuant. At operation, the cystic tumor was found attached to the pedicle (thyroglossal duct), which latter extended, as a cord-like structure, upward between the muscles of the tongue. Subsequent to operation, the patient developed edema of the glottis, and first intubation, and then tracheotomy had to be performed. Other reports of thyroglossal cysts in the mouth area also indicate that the operative risk is great, as compared with the uneventful course of operations for thyroglossal cyst in the cervical area. Thyroglossal cysts in the cervical areas are usually lined with ciliated, columnar epithelium, while those in the mouth area are lined with squamous epithelium for the most part.

The case reported by Parish is interesting because of his success in passing an opaque sectional probe upward into the duct and thus obtaining an x-ray record of its extent. Others have tried to inject the duct with a silver salt in efforts to obtain x-ray pictures of its invaginations. Some investigators have tested the patency of the ducts with injections of methylene blue, sugar solutions or strychnine, on the assumption that, if there were through-and-through patency, these substances would appear at the foramen caecum. So far, these efforts have failed to demonstrate such a case. The reason for this is that the thyroglossal duct is a blind pouch rather than a duct in the true sense. Evidently, these methods have been tried because of the success obtained in injection experiments in anomalies of the urachus.

Verneuil, in 1853, described cysts in the thyrohyoid region, which he ascribed to thyrohyoid bursae, of which he found several. Others are inclined to think that his cases were true thyroglossal cysts.

Neumann has ascribed many so-called ranulae to cystic dilatation of the ductus lingualis.

In conclusion, it remains only to note that Durham gives persistence of the sinus praecervicalis as one other possible cause of median cervical fistulae. The sinus praecervicalis, you will remember, is a cleft formed by the sinking of the lowermost arches and disappears in later embryonic life through a coalescence of ridges. Durham states that fistulae arising through persistence of the sinus praecervicalis are lined with squamous epithelium. A distinction between these two forms of cervical fistulae may be considered a refinement, which must remain undetermined.

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AMERICAN RED CROSS CHILD WELFARE CLINICS IN GREECE.—A number of infant welfare clinics have been established in Greece by the American Red Cross. Many young Greek women are being instructed in the care of children and taught how to distinguish the various types of diseases. The course covers a period of six weeks, and on the completion of the work, those who take it are expected to work among the poor inhabitants of Athens, instructing mothers how to care for their children.

EPIDEMIC WORK AT THE BOSTON CITY HOSPITAL.

BY GERTRUDE L. FARMER AND JANET SCHOENFELD.

Department of Medical-Social Work.

DURING the autumn of 1918, the Boston City Hospital passed through what has probably been its most trying experience since the opening in 1864.

Already handicapped by war conditions, seriously weakened in both its administrative, medical, and nursing personnel, the influenza epidemic brought in addition hundreds of terribly sick and dying patients crowding into the wards. In its capacity as a municipal institution the hospital had to meet this situation as best it might.

During the last of September and the first of October, when the epidemic was at its height, our small group of medical-social workers, realizing the terrific struggle through which the hospital administration was passing, was led to offer its services in the wards, although some of us were untrained as nurses.

We soon realized, however, that our best service would be in facilitating the discharges of those patients (most of them non-influenza cases) in physical condition suitable for discharge, yet detained in the wards, thus adding to the burden of the nurses, and deterring them from their paramount task of caring for the critically ill, at the same time continuing the exposure of these patients to the danger of infection. Quarantine had kept relatives and friends strictly apart, and days and weeks saw these convalescent patients with their discharges unfulfilled, and they a needless tax upon an over-wrought hospital. The breaking down of the hospital machinery for discharge added to their number.

This emergency period lasted about three weeks. In most instances our visits to the homes and elsewhere brought about speedy discharges. In a few cases home conditions were found to be so deplorable that plans had to be delayed.

Difficulties found among the patients awaiting discharge ranged from a simple arrangement of transportation, or the procuring of suitable clothing so as to enable the patient to leave the hospital, to the more complex problem of providing convalescent care for a homeless man, for an attempted suicide, chronic care for

the mentally deranged, and the rehabilitation of whole families stricken with influenza, where the death or serious illness of one or both parents had led to the breaking up of a hitherto normal family group. Did space permit, many instances could be cited illustrative of this phase of our work.

About the middle of October we were called upon to help in the work of the so-called Mayor's Emergency Committee, under the Health Commissioner, Dr. Woodward. This involved an attempt at one medical-follow-up home visit to each of the upwards of 5,000 patients who had been under the home nursing care of the District Nursing Association during a certain period. The work involved even in this simple plan was enormous, and could not be very effective. Much good, however, was no doubt accomplished.

It seemed to us that if we had felt it expedient to help the district nurses to follow up their influenza cases, we could do no less for the patients who had been cared for in our own hospital during the height of the epidemic (only 32 of the above patients had been treated in our wards).

Another consideration was the fact that physicians were predicting the probable occurrence of certain after effects due to the epidemic: phthisis, ear troubles, heart disease, etc.

Our own work had already shown us the social disabilities which too often followed in the wake of the epidemic.

In November, 1918, therefore, we decided to undertake intensive follow-up work for the 993 patients with a diagnosis of influenza or pneumonia, or both, who had been discharged from the main hospital and the South Department from September 11th to October 31st. Of this number 38% had died in the wards. What conditions existed in the homes as a result of this loss? Were other members of these families ill at home? How were they being provided for? These last considerations led to our deciding to include in our work the families of those patients who had died in the hospital.

From the list of the 993 patients we eliminated the following:

Patients with residence outside Boston....11
Patients with residence outside Massachusetts.14
Patients admitted from other institutions...31
(Including Canton School for Crippled

Children, Home for Destitute Catholic Children, Boston State Hospital, Charles Street Jail).

Patients in military service.....86
Previously in care of the District Nursing Association32
Doctors, nurses, private patients, etc.....92

It was felt that these 266 persons were obviously provided for, and should not be included in our investigations.

VISITING.

During November and December under one of our workers, Miss Gormley, assisted by two other members of our staff, and two of the students from the Boston School for Social Workers, 727 addresses were visited, and much data collected. We received valuable assistance in these initial visits from the District Nursing Association and the Women's Motor Ambulance Corps of the Red Cross, as well as from a member of our own committee who lent us the use of her car.

Of the 727 addresses visited no information was available in 20%:

1. 63 addresses, 9% of those visited, had given wrong addresses on admission.
2. 80 patients, 11%, or their families, had moved and could not be traced.

Information was often obtainable by consulting relatives, friends, landladies, either by interview or letter, where it was not possible to reach the patients themselves. In this way reports were obtained on 584 patients. This represented a group of 554 families.

RESULTS OF VISITING.

Our contact with these 554 families brought us in touch with 1006 individuals who had been ill with influenza, pneumonia, or both; 594 persons had received hospital care, ten of these at the Massachusetts General, Peter Bent Brigham, and Children's Hospitals, the remaining 584 at the Boston City Hospital, while 412 had been under treatment at home. Many of those treated at home, especially in the case of young children, apparently had not been ill enough to require the services of a physician.

The total number of patients admitted and discharged from the Main Hospital and South Department are shown in Chart I.

The distribution of cases by families is shown on Chart II. It is of interest to note that about 30% of the persons we came in touch with were men living alone in lodging or rooming houses.

CHART I.

Patients Treated in the Boston City Hospital for Influenza, Pneumonia, or Both, during the Height of the Epidemic, Sept. 11, to Oct. 31, 1918.

RECORDS OF PATIENTS	TOTALS		MALES		FEMALES	
	No.	%	No.	%	No.	%
Totals	993	100	682	100	311	100
Died in wards ..	380	38	243	35	136	44
Discharged	613	62	439	65	175	56
Main Hospital	641	100	345	100	296	100
Died in wards ..	270	42	140	41	130	44
Discharged	371	58	205	59	166	56
South Department	352	100	333	100	19	100
Died in wards ..	110	31	104	31	6	32
Discharged	242	69	229	69	13	68

CHART II.

Distribution by Methods of Care Provided for Patients Who had Influenza, Pneumonia, or Both, in Families Visited in the Course of this Investigation.

CASES REPORTED IN FAMILIES	NUMBER OF PATIENTS IN WHICH CASES OCCURRED	NUMBER OF CASES	NUMBER OF CASES TREATED IN	
			Hospitals	Homes
Totals	*554	1006	1594	412
One case	357	357	357	0
Two cases	78	156	86	70
Three cases	46	128	53	75
Four cases	30	120	38	82
Five cases	25	125	36	89
Six cases	10	60	15	45
Seven cases	4	28	4	24
Eight cases	4	32	5	27

* 554 individuals treated in B.C.H. represent 554 families.

† 10 individuals were treated in other hospitals.

CHART III.

Subsequent Records of Patients Who had been Treated for Influenza, Pneumonia, or Both, and were Discharged Alive from the Boston City Hospital, Sept. 11, to Oct. 31, 1918.

RECORDS OF DISCHARGED PATIENTS	TOTALS		MALES		FEMALES	
	No.	%	No.	%	No.	%
Total number patients discharged	*272	100	171	100	101	100
Entirely well ..	168	62	111	65	57	56
In care of private doctor	19	7	10	6	9	9
In care of other dispensaries	19	7	8	5	11	11
Further supervision at B.C.H.	63	23	42	24	21	21
Died at home ..	3	1	0	0	3	3

* No available reports on 341 patients who were discharged to their homes.

CHART IIIa.

Records of Other Members of Discharged Patients' Families Found to have been Ill with Influenza, Pneumonia, or Both, and who were Cared for in their Own Homes.

RECORDS OF MEMBERS OF FAMILIES	TOTALS		MALES		FEMALES	
	No.	%	No.	%	No.	%
Totals	222	100	91	100	131	100
Entirely well ..	143	64	55	61	88	67
In care of private doctor	11	5	5	5	6	4
In care of other dispensaries	6	3	4	5	2	2
Further supervision at B.C.H.	49	22	22	24	27	21
Died at home ..	13	6	5	5	8	6

CONDITIONS FOUND AMONG THE PATIENTS DISCHARGED TO THEIR HOMES.

In the case of the 613 patients who were discharged relieved, efforts were made:

1. To determine their physical condition;
2. Where necessary to provide, or see that provision was made for further adequate medical care, either in our own Out Patient Department, with private physicians, or elsewhere.

Medical conditions found in hospital patients are shown in Chart III.

The medical condition of members of these families who had been treated at home is shown in Chart IIIa.

RESULTS FOUND IN THE FAMILIES OF THOSE WHO HAD DIED IN THE WARDS.

The families of those who had died in the wards were visited in order to determine the needs of other members of their families, medically and socially. Of the 380 addresses visited, information was obtained in 312 instances. This 312 represents 286 families. 53 of the 286 must be eliminated because they were found to be single men living alone in lodging houses.

In addition, 60 of the 286 were found to be families where there was no other member ill with influenza and where there was no social situation. In the remaining 173 families, 190 individuals were found to have been ill with influenza, pneumonia, or both. The following results were found:

Well entirely	107
Died at home	19
In care of private doctor	10
In care of other dispensary	9
Under B.C.H. supervision	45

MEDICAL SITUATIONS AND HOW THEY WERE MET.

The medical follow-up included inquiry by telephone or letter from private doctors, other dispensaries, and two or more visits to individuals. If an individual showed any after-effects and, according to investigation, he was under no other medical supervision, he was urged to report to the Boston City Hospital Out Patient Department. This group numbered 157 persons.

The classification of after-effects as they were recorded on first visit to the patient is shown on Chart IV. In many instances the after-effects as noted were found on further examination by our physicians in the Out Patient De-

CHART IV.

Number of Patients Who Reported Specific After-Effects.

AFTER-EFFECTS	HOSPITAL AND HOME CASES			HOSPITAL CASES			HOME CASES		
	Total			M.			F.		
	No.	%		Tot.	M.	F.	Tot.	M.	F.
Total patients ..	206	100		162	104		41	105	42
Total after effects ..	349			204	145		157	130	57
Ear	12	6		6	6		5	5	2
Eye	3	1		2	1		2	1	1
Nose-throat ..	11	7		7	7		2	0	1
Cough	74	31		50	24		4	2	5
Sweats	74	31		50	24		4	2	5
Excessive fatigue ..	25	12		14	11		3	16	8
Mental	3	10		50	33		45	33	12
Sleeplessness ..	19	9		10	9		11	8	3
Short breath ..	18	9		12	6		8	7	1
Muscle, joint ..	18	9		13	5		14	10	4
Intestinal troubles ..	16	8		6	10		5	1	1
Undernourished ..	7	3		3	4		0	0	0
No definite after-effects noted on 25 individuals.	60	29		31	29		33	18	15

partment to be only slight symptoms of a much more serious condition. The subsequent diagnoses as found on medical records later were as follows:

1. Empyema.
2. Loss of hair.
3. Phthisis.
4. Tonsillitis.
5. Cardiac conditions.

Other physical conditions, such as chronic bronchitis, mitral disease, arthritis, that may not have in any way been influenced by influenza, were brought to the attention of the individual and proper medical care provided.

In a number of cases it was found that individuals were suffering from some after-effects which they considered slight. They could not be persuaded to report to a free clinic, yet to their own minds their symptoms did not warrant the expenditure of any money for medical care with a private doctor. To illustrate, Mr. McL. has a cough, excessive fatigue, sweats, sleeplessness. He claims "When I need a doctor I know where to get one, but now I have better use for the money." He could not be persuaded to come to the clinic or attend any other evening clinic that would not interfere with his work.

No effort has been made to classify the ages of the 993 patients except in the case of the South Department. This classification of 352 shows that the greatest age incidence was in males between the ages of twenty and forty years. While this group is far too small to be

of much significance, it does agree with the findings throughout the country, that influenza seems to attack a person in the prime of life.

SOCIAL SITUATIONS AND HOW THEY WERE MET.

The social problems that were met with were many and varied. Including:

Providing needed convalescent care: The coöperation of the Boston City Hospital Convalescent Home, Chickering House, St. Luke's, Wellesley, were secured for this purpose.

Material Relief: Mothers' Aid, Provident Association, Associated Charities, Churches, American Red Cross, Federated Jewish Charities, Adult Poor Department, Catholic Charitable Bureau, St. Vincent De Paul Society, State Board of Charity, and our own Special Relief Fund. All these agencies aided in the adjustment of these situations.

Providing for children was made possible with the coöperation of Baby Hygiene Association, Society for the Prevention of Cruelty to Children, Children's Friend, Children's Institutions Department, Home for Little Wanderers, Children's Aid Society.

Specialized Medical care was provided by the Boston Consumptives' Hospital, Norfolk State Hospital, Psychopathic Hospital.

The Dietetic Bureau undertook to teach proper preparation of food to families where this need was evident.

The Housing Commission received reports on conditions that were in violation of the housing laws of the State. Unsanitary living conditions found in homes, not due to housing, were reported to the Board of Health.

Other agencies who coöperated were Young Men's Christian Association, Tufts Dental School, Boston Lying-In Hospital, District Nursing Association, and Prenatal Nurse.

Many families were entirely wiped out, others had lost members of their families and had been unable to make the necessary adjustment. To illustrate:

Johnnie B., fourteen years old, had been in the hospital three months with pneumonia. He was ready for discharge and the doctor reported this situation to the social worker. When she visited, she found the step-father and two of six children ill with influenza at home. Two other children had died of the dread disease the previous week. Having no income during the illness of the father, the body of the first child who had died remained for three days on

the kitchen table until this condition was brought to the attention of the Board of Health Nurse. The family were loaned money for burial by the church for both children. Being so in debt the mother desired to go to work, but this arrangement would not prove to the best advantage of Johnnie, who needed his mother's care when he returned home. The house they lived in had been condemned. Before Johnnie's return home another better tenement was found and the family moved. Because of their indebtedness to the church, they refused further aid. Finally they were persuaded to allow social service to advance loan for coal, provisions and clothing, to be paid in small installments. By this time the father was able to return to work, and the mother continued to remain at home and care for her children. With the help of the Dietetic Bureau, she is being shown how best to buy and prepare food for her family. The District Nurse calls daily to dress Johnnie's open wound, and he reports to the Out Patient Department every week, in the Red Cross car. A Children's Aid Society Home Library was installed and Johnnie's forced leisure hours are being utilized in reading good wholesome books.

Another situation that illustrates something of the constructive work done in the White family. Mrs. White and her two children were all patients in the hospital. Mr. White was overseas fighting for his country. As soon as Mrs. White was fit to leave the hospital, arrangements were made for her to receive convalescent care at the Boston City Hospital convalescent home. The two children have been placed by the Children's Mission with the help of the Red Cross, and when they are entirely well again, this soldier's family will be reunited ready to receive him.

In our visiting, we found that a father, mother and two children had died of influenza, leaving a two weeks old baby the only living member of the family, in the care of grandparents, well meaning but ignorant. The Baby Hygiene Association Nurse is supervising the feeding, and from recent reports the baby is "doing nicely."

SUMMARY OF OUR MEDICAL FOLLOW-UP WORK.

From September 11th to October 31st, 1918, 993 influenza patients were discharged from the Boston City Hospital.

62% were "discharged relieved."

38% had died in the wards.

As these patients were not studied as a group on admission, it is not known how many of the 38% had been moribund at the time. We do know that many patients were admitted in that condition.

With from 1 to 8 influenza patients in each family this brought us in contact with 1006 persons in 554 families.

Of those "discharged relieved," 62% were found to be entirely well and leading normal lives by the end of December, that is, from about 2 to 3 months after discharge.

1% had relapsed and died at home.

37% showed after effects.

Of other members of the families of this group 64% were entirely well, 6% had died at home, and 30% showed after effects.

In the 173 families of those patients who had died in the wards, 190 persons had had influenza. Of these 56% were entirely well, 10% had died, and 34% showed after effects.

While our figures show a similarity in the final results of both hospital and home treatment, no conclusions are possible as to the comparative value of the different methods of treatment. It is fair to assume that patients admitted to the hospital may have been more seriously ill.

While in many instances we were obliged to allow too long a time to elapse between the time of discharge and our initial visits, on the whole we were successful:

1. In securing adequate medical after care for the majority of those patients who showed after effects.

2. In many instances some form of social readjustment was needed and was supplied.

Practically all of the classification and tabulation involved in this study was done by Miss Schoenfeld as part of a required study for the Boston School for Social Workers. She also had charge of the visiting and intensive social case work necessary to complete the study during January and February.

It is apparent that there is a considerable amount of work involved in this sort of intensive medical-social after care, also a good deal of expense. While the disease has not again reached the height it did in September and October, there has been a steady flow of admissions, and two wards have been kept filled most

of the time. It has been a matter of great regret to us that we have not been able to undertake the same intensive work for all the influenza patients. We have, however, done what we could to relieve the worst conditions and provide some medical after care.

INFLUENZA AS A FACTOR IN PRECIPITATING LATENT PSYCHOSES AND INITIATING PSYCHOSES, WITH A BRIEF HISTORY OF THE DISEASE AND ANALYSIS OF CASES.*

BY A. F. HARRIS, M.D., WORCESTER, MASS.,

Pathologist, Worcester State Hospital.

INFLUENZA as an epidemic has occurred since the early ages. Hippocrates and Livy refer to an epidemic in 412 B. C., which is claimed by medical historians¹ to be in all probability this same entity. There is mention of epidemics in the sixth century in which the symptoms of debility, cough, and headache were the principal factors. In the eighth and tenth centuries similar epidemics were described.

Positive knowledge regarding the epidemics is dated by Wilson² to 1510 when Europe was swept by a great pandemic and, during the past four hundred years, upwards of seventy epidemics have occurred, some of which have been pandemic.

It has been known under various names, two of which are in common usage, Influenza and La Grippe. The name Influenza is supposed to have been derived from the Italians who at that time believed the stars had an influence on the disease. La grippe is claimed to be derived from the Polish "Grypka."¹

Some interesting descriptions are found in the literature relating to the various epidemics. In Miss Strickland's "Life of Mary Stuart" is found the following description of a disease called the "New Acquaintance."

"Immediately upon the Queen's arrival here she fell acquainted with a new disease that is common in this town called here the 'New Acquaintance,' which also passed through her whole household sparing neither lord, lady, or damoiselle—not so much as either French or English. It is a pain in their heads that have

it and a soreness in their stomach, with a great cough; it remaineth with some longer, with others shorter time as it findeth apt bodies for the nature of the disease.

"The Queen kept her bed six days; there was no appearance of danger, nor many that die of the disease except some old folk."^{2,3}

Dr. Rush, of Philadelphia,⁴ in describing the epidemic of 1789-90, states "that members of the first Congress which met in New York complained on arriving in Philadelphia of colds, which they attributed to travelling by night in public stages. The malady spread so widely it was soon recognized as influenza. Thousands of people suffered in Philadelphia without being confined to the house. Perpetual coughing was heard in every street of the city. Buying and selling was rendered tedious by the coughing of the farmer and merchant in the market places. It even rendered divine services scarcely intelligible in the churches."

Delirium accompanying influenza has long been recognized and is often an early and alarming symptom. Knapp, quoting from Schweieh "Die Influenzie," states in the epidemic of 1590 in Germany some of the victims were violently insane and wandered over the hills in their delirium.⁵ Huxham refers to the delirium accompanying the disease in the epidemic of 1737.¹

Bonnet of Bordeaux observed one case of acute mania following the epidemic of 1837, and Crichton-Browne one case of acute dementia following the epidemic of 1874.⁶ Petriquin,⁷ referring to the epidemic of 1837, records several patients tormented by melancholy ideas and four or five suicides were accomplished at the hospital in Paris. Rush, referred to by Mariet,⁷ in speaking of the epidemic of 1789-91, mentions several persons were stricken with symptoms of insanity and one attempted suicide; he also speaks of several having had hallucinations of sight.

In connection with the pandemic of 1889-92, we find isolated reports which are more or less numerous in describing the pandemic of 1889-92 and considerable discussion by the French, Dutch, English, and German, relative to psychoses associated with influenza.

Kirn of Freiburg⁸ collected data on 54 cases and concludes that where delirium occurs with hallucinations and delusions during the febrile period, the patients recover from the same and are rarely found to have an hereditary predispo-

* Read before Worcester District Medical Society, April 16, 1919.

sition to insanity. Where the psychoses develop post febrile this is not apt to be the case, and that 54% who thus became insane labored under the predisposition. He collected thirty-nine cases and found insanity usually came on in from four to eight days after cessation of fever, and in some the symptoms were not noted until three weeks. He found that melancholia (twenty-two cases) was the most common type.

In the discussion of the Psychiatric Society of Berlin,⁹ Lehmann presented three cases following influenza in which there was a history of mental disease. Minter reports observations from the clinic of Mendel and concludes that the psychoses following influenza so far have not revealed any particular symptoms which might classify it as belonging to or following influenza. M. Schuele¹⁰ states that in nine cases, influenza was not the only psychogenic factor but simply the exciting cause.

Savage,¹¹ quoting Greisinger, states "there is no simple and special neurosis depending on influenza alone, but various forms of neurosis may arise in predisposed subjects. Influenza alone does not produce insanity." Savage states that in cases where influenza has precipitated another attack of mental disorder it resembles the previous attack; and that any form of mental disorder may follow; but mental depression, with various forms of melancholia, is the most common and frequently follows the influenza after an interval.

Dr. Harrington¹² in reporting eleven cases at Danvers finds predisposition either congenital or acquired in all but one, in which the history was not obtained.

Ladame¹³ holds the opinion that there is always a predisposing cause to insanity following influenza.

Menninger¹⁴ found that depression was uncommon in the series of cases he analyzed, and that delusions and hallucinations were most common. Thirty-two of the eighty cases analyzed had a predisposing factor; while in forty-eight no predisposing factor could be traced.

During the past five months, eighteen patients, five male and thirteen female, have been admitted to this institution, the direct cause of whose commitments has been attributed to a comparatively recent attack of influenza. We have ruled out the case of one woman who was admitted in a very delirious condition, with a temperature of 106 degrees, and died two days after admission from pneumonia following in-

fluenza, and are considering those in which the mental symptoms developed post febrile. Those in which an alcoholic or syphilitic history was obtained have also been excluded.

We have divided these into two classes:

1. Those in which some predisposing factor could be traced.
2. Those in which no predisposing factor could be traced.

In subdividing Group One, of which there are eight cases, we find, that in three, influenza occurred during puerperal period; in one case which has not cleared up, a seven-months' miscarriage occurred. The other two have improved and are at present on visit. The diagnosis of dementia praecox was made in each case. Both were self-accusatory, one attempted suicide before commitment by jumping from a bridge, and both entertained illy-defined persecutory ideas. The case which has not cleared remains in a manic condition—denudative, destructive, irrelevant with marked flight of ideas. The attack of influenza was not severe in these cases, an apparently good recovery being made in from seven to ten days, and the temperature did not exceed 102 degrees. Mental symptoms were apparent in seven days, in two and in three weeks in the other.

In three the influenza instigated a second mental attack, two having been confined previously in a hospital on account of mental disturbance. The diagnosis of manic depressive, manic, was made in two cases; the post-infections in the other. These patients were admitted in an excited condition, were destructive and remained in a disturbed condition for periods of two, three, and six weeks. Auditory hallucinations and delusions of persecution were present in two cases. The attack of influenza was severe in each case, each remaining in bed for over two weeks, and the temperature exceeded 103 degrees. The mental symptoms were apparent in one, two, and four weeks after recovery from the influenza.

In two the family history showed defects; in one the father and sister were insane; in the other a grandfather had been insane. Both of these cases were diagnosed as dementia praecox and have shown no improvement during their residence. Delusions and hallucinations, auditory in one instance, visual in the other, were apparent in seven and ten days after recovery from the influenza.

In Group Two, in which no predisposition could be traced, there are nine cases with the following diagnosis:

Dementia praecox, four; unclassified psychoses, four; post-infectious psychoses, one.

In the four cases diagnosed dementia praecox, delusions of persecution were present in three; auditory and visual hallucinations in two. Three of these patients have shown no improvement during their residence in the institution. One was taken home on a visit but had not cleared at the time he left the institution. The mental symptoms were apparent in two weeks to three months following the influenza.

In the unclassified cases, repression was present and marked in three, but these patients cleared after a short hospital residence. The attacks of the influenza in these cases were severe in two, and moderately so in two cases. Depression became apparent in from one to three weeks after recovery from the influenza.

In the case diagnosed post-infectious psychosis, excitement, and illy-defined delusions of persecution were present. This patient was taken home on a visit.

The diagnoses of these cases was made by the staff of this hospital at general conference when the patient was presented and the case discussed.

While this series is too small to draw any definite conclusions, the following are rather striking points and worthy of consideration.

1. Influenza does initiate latent psychoses, and in a certain number of instances, instigates same.

2. There is no relation of the severity of the attack of influenza to the psychoses, but the latter may follow mild as well as severe cases.

3. While the symptoms develop in most cases in less than two weeks following the febrile period, they may not be apparent for three months.

4. Delusions and hallucinations were the most common symptoms in this series, being present in ten of the seventeen cases. Depression was the most pronounced symptom in only three cases, while excitement and destructive tendencies were present in fourteen.

5. While any form of psychoses may result, dementia praecox was the most common in this series, eight of the seventeen cases presenting

this picture. The average age of the patients diagnosed as such was 27 years.

6. There is a possibility of an organic basis in some cases for the picture of dementia praecox.

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HYSTERIA IN A MALE AS A DEFENSE REACTION. A CASE REPORT*

BY KARL A. MENNINGER, M.S., M.D., BOSTON,

SOME years ago in a paper entitled "Hysteria as a Weapon in Marital Conflicts" (Taunton State Hospital Papers, 1914-15) Myerson advanced the idea that among the measures resorted to by women to bring about a reprisal for the resistance to their desires of an uncongenial husband, hysteria was probably quite frequent.

A case is cited. A woman of 38 developed an hysterical state of paralysis and anesthesia following a domestic quarrel. It appeared that fainting, vomiting spells, and headaches also followed their numerous quarrels, and had at previous times been sufficient to put the victory on her side. The immediate condition of hysteria resulted from an issue in which the husband remained obdurate.

A case has recently come to our attention at the Psychopathic Hospital which seems in many ways to be a male analogue to the case given by Myerson, as illustrative of an hysterical reaction to the unpleasantness of domestic conflicts. The purpose of the article is not to defend or elaborate the idea already well before the mind of the psychiatric world, that the reaction to the disagreeable may be an etiological factor if not indeed the

* Contribution of the Psychopathic Hospital, Series of 1913.

essential nature of hysteria. This is merely the report of a case in which hysterical symptoms developed in a man, following domestic difficulties, without evidence of other form of psychosis.

CASE HISTORY. Patient is a man of 32, of American birth and ancestry, Protestant faith, negative family history. He was brought to the hospital by the police, to whom he had gone with the complaint that his landlady and his wife had threatened to call the police if he returned home.

His present illness began with an attack of twitching of the arms, legs, and head, and particularly the shoulders. This attack began suddenly three weeks before admission. He had come home from work one evening "very excited," to use his wife's description, and at that time accused his wife of certain misconduct and unfaithfulness. He continued to have these twitching attacks of the limbs from that time until his admission to the hospital. He consulted several charitable hospital clinics in the city and was, in each case, diagnosed "tic." During the three weeks he railed much against his wife and at one time handled her somewhat roughly. At these times of excitement his twitchings would become much more severe.

It appears, from further study of the case, that the patient had been for some time considerably perturbed by his wife's misconduct. (This unfaithfulness on her part was fairly definitely established.) Two years prior to his admission he had an attack similar to the present one, but which subsided without treatment after a few weeks. This attack also had followed a domestic altercation. Since that time the family difficulties had increased, the wife gave more and more evidence of being unfaithful to him. Immediately preceding the present attack he had been much agitated by the fact that his wife left the home for a period of three days and nights, and upon the day of the attack he had discovered a letter of a compromising nature written by her to one of her male friends. He also discovered that she had pawned the wedding ring he had given her and he declared that she had become enraged because he recovered the pawn ticket from her. Then followed the precipitation of the present attack as detailed above.

Patient's past history is essentially negative, although he admits that he has always been

"nervous." He was not alcoholic: had never been arrested. Did not have a seclusive temperament. He earned from \$30 to \$32 a week, and had never been discharged.

His mental examination was also essentially negative. His psychological examination showed very good memory and learning ability, his final rating being, however, only 11.8 on the Yerkes-Bridges Point Scale. It was the opinion of the psychologist that this rather low rating has no positive significance and is in the usual compass of the hysterical patients. It is interesting to note that he resisted all suggestions in this test. His physical examination showed him to be a well developed and well nourished man, 6 feet, 1 inch tall, with no disturbance of the special senses, the cutaneous or deep sensations, gait or speech. There were no neurological or somatic abnormalities. The laboratory findings, including spinal fluid and blood serum Wassermann, were negative.

The patient was discussed at staff rounds at which time he was rather uncoöperative, and would only say there was another side to the story than that of his wife. At the staff meeting, held eight days after admission, the patient entered the room with a functional torticollis, which was relieved at once by merely mechanical (manual) straightening and suggestion. He ascribed this torticollis to results of the lumbar puncture. It did not reappear. He stated in this interview that in the past, as in the present attacks, the twitchings immediately followed his domestic altercations, and subsided when he had been able to relieve his mind in some degree of the worry attendant upon them. The diagnosis of "hysteria," rather infrequent at the Psychopathic Hospital, was unanimously made by the staff at that time.

The suggestions made by Myerson in the paper above cited and in a more recent communication, "Neuroses of the Housewife," may prove to throw some light on the complex intricacies of the relation of domesticity and psychiatry. If the theories are tenable, one should find manifestations in the male as well as in the female of the species, since although ordinarily the domestic interest is less developed and less intense in the male, it constitutes a definite and often powerful motive in the lives of many, if not most, men.

It is suggested that the case here cited may be some supportive evidence on this neglected side.

Medical Progress.

RECENT PROGRESS IN PSYCHIATRY.

By HENRY R. STEDMAN, M.D., BOSTON.

CHARACTER AS AN INTEGRAL MENTALITY FUNCTION.

UNDER this head G. Fernald¹ illuminates several questions in the field of mental defect and disorder, particularly the nature and status of the mental defective of the moral type. He also sets forth the actual medical and sociological results in the study and treatment of cases arising from the recognition of character and its deviations or anomalies as a major field of investigation in personality study. The paper is a distinct step in advance toward adoption of the fact that the moral nature, the character, no less than the intellect, is a function of the mind. When pathological character-defect becomes established on a sound basis as an indubitable fact we may reasonably expect just and scientific disposition, care, and treatment of the defective delinquent of this class. In support of his views Fernald advances the following citations:

"Innate tendencies to thought and action. . . constitute the native basis of mind."

Responsibility is referred to behavior rather than to intention or planning. This tacitly recognizes that which we have called character as integral.

Character as the immediate determinant of adult behavior makes for personality efficiency not less than does intellect.

Instincts, emotions, conscience, and sentiments are subsidiary mental functions referable to character rather than to intellect.

The intellect dictates control of emotional expression while character exerts such control—effectually or ineffectually.

Intellect and character are synchronous in mentality development, but are neither coincident nor coextensive in either time or rate of development. Their relative importance is inconstant at any age level.

Personality studies of those of childhood physical ages are concerned less with character than with intellect since the former is then relatively rudimentary; but personality studies of adolescents and adults consider character the more intently as its dynamics increases.

Innate intelligence deficiency is stationary and irremediable, while character deviations are

theoretically susceptible of correction while plasticity remains.

The recognition of character as a primary mentality function makes for clarity in psychiatric case study and terminology, and may perhaps hasten the discovery of methods of metric treatment.

Sociologically, a personality is more inimical whose character deviations are grave than is one which exhibits a grave intelligence deficiency.

In psychiatry and sociology, as well as in legal and popular usage, character with its subsidiary fields is immanent in personality evaluation, both objectively and subjectively.

The eugenic and sociologic aspects of a population survey are more intimately seen, more clearly apprehended and recorded, and more transparently represented when character deviations are recognized as an integral categorical entity.

SCHIZOPHRENIA.

BLEULER² reiterates his view that schizophrenia is fundamentally a toxic disorder, but adds that sexual complexes determine much of the symptomatology. Later he states that many symptoms of schizophrenia which we regard as direct expression of the disease process have become deprived of this dignity owing to our understanding of psychic forces. They prove to be the result of normal mental mechanisms working under changed conditions which, in the case of schizophrenia, is brought about by Bleuler's "association disorder." Indeed, he admits that the outbreak of the acute psychosis in schizophrenia often has nothing whatever to do with the disease process. Therefore, the "disease" must not be looked for in the hallucinations or in the dementia, but in the brain changes which have produced the association disorder. This knowledge (or, as we would like to say at any rate, the recognition of psychogenic factors in dementia praecox) is extremely important for therapeutics. It is also important from other points of view; for example, for the study of heredity. Obviously, if external situations and not the disease process such as often produce the psychosis, many persons who are latent schizophrenics do not come under observation, and the hereditary disease is much more frequent than the obvious disorder (the phaeopsychosis, as Bleuler calls it). He ridicules the childish simplicity with which many heredity studies have been carried on, and thinks that one of the rea-

sons for the barrenness of results is precisely the fact that the difference in the frequency of the heredopsychosis has not been appreciated. The difference also explains why parents and children are rarely schizophrenic in the same degree, since grave schizophrenies seldom marry; but the latent schizophrenies are, from the point of view of heredity, just as important as the grave ones. All this, of course, makes the study of heredity extremely difficult.

THE FAMILY OF THE NEUROSYPHILITIC.

Solomon³ has examined the families of 247 syphilitics, of which 160 families were of syphilitics suffering from general paresis, 72 of syphilitics without definite central nervous system involvement, and 15 with the diagnosis of tabes and cerebro-spinal syphilis. Of these 247 families, 69, or 28 per cent., showed no defect as to children, 30 per cent. in the paretic, and 27 per cent. in the other group. Only 61 families, or 25 per cent., showed neither defect as to children nor Wassermann reaction. These figures show unequivocally that the incidence of syphilis is tremendously high in the families of the syphilitic and that it is as high in the families of the paretics and tabetics as in those whose syphilis has not invaded the nervous system. To handle the problem properly, education is essential, education of the physician, the social worker, and the layman. As an argument against family examinations in syphilitics, it is sometimes said that there is grave danger of breaking up the family if it is learned that one member has syphilis. This is a very weak argument against examination if by such examination steps can be taken to eradicate syphilis from the family. But the argument is entirely fallacious. In Solomon's three years' experience with the families of syphilitics and in dealing with more than 250 families, not a single family has been broken up nor, he believes, has undue unhappiness been brought into any. We shall be able to begin to attack the problem of syphilis only when the knowledge of syphilis and its manifestations and ravages is widespread. To those who fear to tell a man or woman that general paresis and locomotor ataxia are syphilitic diseases, he would give warning that before long this will be as common knowledge as that consumption means tuberculosis. And to those who have withheld this knowledge and allowed syphilis unhindered

to reap its harvest, not thanks but rather re-
criminations will come.

INFLUENZAL PSYCHOSES.

1. One hundred cases of mental disease associated with influenza in the recent pandemic have been studied at the Boston Psychopathic Hospital. Eighty of these have been intensively analyzed by Menninger.⁴

2. The variety of mental disturbance manifested is wide, embracing in this series nine of Southard's eleven groups of mental diseases. For convenience they are readily classifiable into four groups: delirium, dementia praecox, other psychoses, and unclassified. Of these the second (dementia praecox) is the largest group numerically.

3. That age may be a factor in determining the form of psychosis evolved is suggested by an analysis of the average ages of the groups.

4. Analysis of the time relations proves that the duration of the influenzal attacks in the patients developing psychoses is not appreciably greater than the average as reported in the present epidemic, nor does the duration modify the form of psychosis developed.

5. There is in most instances an interval between the termination of the influenza and the first manifestation of symptoms of psychosis, the averages varying from two to eight days in all save the febrile deliria. Herein, Bonhoeffer's principle of the relation of interval and complexity of the psychoses is supported.

6. The symptomatology is as complex as the nosology. Delusions and hallucinations are the most common symptoms, and depression is relatively infrequent, contrary to the case in mentally normal subjects.

7. The states of delirium encountered are best classified as of three forms, on a temporal basis: pre-febrile delirium (prodromes), (cum-) febrile delirium, and postfebrile delirium (collapse delirium, exhaustion delirium, confusion, etc.). This accounts for all cases and avoids ambiguity.

8. Neurologic signs were few; ophthalmoscopic examination negative, save for one instance of bilateral neuritis, and spinal fluid examination negative save for one instance of modified colloidal gold reaction.

9. An organic basis for some instances of the picture denoted dementia praecox is supported by the preëminent frequency of its occurrence in this series (31 per cent.), the age

factor above mentioned, the frequency of schizophrenic symptoms in otherwise typical cases of delirium, and the occurrence of several (six or more) cases in which a diagnosis could not be made between delirium and dementia praecox, despite the presence of all diagnostic aids.

10. The psychiatric prognosis in influenza justifiable on the basis of the present series may be expressed in general as delirium (with recovery), death, or dementia praecox. This excludes cases of previous psychotic bases, such as alcohol and neurosyphilis.

EMOTIVE PSYCHONEUROSES.

De Fleury⁵ agrees with Dupré that besides neurasthenia and hysteria we must accept a third group of psychoneuroses, the emotive type, a constitutional or acquired *émotivité*. They have been classed hitherto mostly as traumatic neuroses, but the traumatism merely reveals or aggravates the constitutional instability. The train of symptoms from loss of balance in the circulatory, respiratory, or digestive system, the tremor, the disturbance in the rhythm of the heart beat, the exaggeration of the reflexes,—all this represents an enormous total of automatic neuro-muscular activity which has nothing in common with the clinical exhaustion of neurasthenia. The spasmodic constriction of the muscles of the neck, and local spasms elsewhere distinguish the emotive psychoneuroses from hysteria. These two conditions are not only distinct but are separated by a deep chasm, the chasm which parts honest veracity from a morbid tendency to falsehood. With the emotive psychoneurosis, the subject is ashamed of his symptoms and seeks to conceal them, while with hysteria, the subject seeks to display them theatrically, and the symptoms vanish when there are no longer any witnesses. This conception of the hyperemotive constitution clears up at once the puzzling field of psychoneuroses. They all fall naturally into the three classes: neurasthenia, hysteria, and the emotive constitution, sincerity being an attribute of the latter in distinction from hysteria.

PATHOLOGIC WANDERLUST.

Helweg⁶ says that the morbid impulse to go away, without special motive that others can see for the change, is a common feature of epilepsy, but is not confined to this disease. The French regard this *automatisme ambulatoire* as a manifestation of hysteria. In Danish litera-

ture, Helweg has found records of only four cases, and nowhere has he been able to find records of this morbid tendency in degenerates other than epileptics and the hysteric. He describes six cases in detail in which degenerates displayed at times this morbid wanderlust although conscious of what they were doing. In five of the cases there was a history of a fall on the head and in a number of cases on record there is a casual reference to trauma of the head. One patient was a young woman of a well-to-do family with some inherited mental taint. She seemed normal as a child but met with two accidents injuring the head, and not long after the second one began to wander away from home. Later she left home again and again, living at hotels in the town, pawning her belongings and sometimes stealing to get money. On some of her wanderings she was accompanied by a man, a chance acquaintance, but there did not seem to be any erotic tendencies, and occasionally she had no clear remembrance of the times she was away from home. Placed in an institution for mental disease, nothing abnormal otherwise could be detected in her.

The psychopathic degeneration responsible in Helweg's cases for the wanderlust is about as common in women as in men, but in women it is not fanned into a flame by abuse of alcohol, and it usually manifests itself in them in other ways than in this tendency to vagabondage. Usually some quarrel or other unpleasantness brings the impulse to run away. In one of the cases the man was in military service and repeatedly ran away to visit his wife. The pathologic wanderlust is practically the same thing whether it is a result of epilepsy, of hysteria, or of dementia praecox, or psychopathic degeneracy. There is no need to invent special names for it like Donath's "poriomania," and Joffroy's "dromomania."

WAR PSYCHOSES.

Henderson⁷ has described six cases of very unusual war psychoses. All of them fit more or less into the Korsakow syndrome, showing extraordinary memory defect, confabulation, and an absence of retention for recent events. The first three showed this mental picture, following burial. Of the other three, one followed dysentery, one enteritis, one dysentery plus malaria. These last three are good examples of toxic-exhaustive states and showed a more or less typical Korsakow syndrome; thus the picture is not

unlike that encountered in civil life. The first three cases are much more unusual and would probably best be considered as examples of what Mott has termed "*commotio cerebri*," and the condition in each may possibly have been accentuated by the inhalation of noxious gases.

However, all six cases have much in common as far as the mental history is concerned. It is not by any means unusual to see cases with amnesia for the period of burial, often lasting hours or days afterward; but it is exceedingly uncommon to see cases showing the peculiar confabulatory state described.

The close association between cause and effect, the patients developing their peculiar mental state directly after the accident, would seem to put the hypothesis of mental shock out of the count. Furthermore, all of these three cases, up until the accident occurred, had been able to "carry on" as formerly. Further, the mental picture exhibited by each was much more in the nature of an organic than of a functional type of reaction.

The observations of the author seem timely. After Mott's first description of minute hemorrhages into the brain and the assumption of an organic basis for many cases of so-called "shell-shock," a justifiable reaction among the psychiatrists took place. Many so-called organic cases proved to be functional. It is therefore of great interest to note these three cases, undoubtedly on an organic basis.

CLASSIFICATION OF MENTAL DISEASES.

Southard⁸ reaches the following general considerations concerning the recent American classifications in psychiatry:

1. There is an extraordinary unanimity on the part of American psychiatrists as to the constituents of psychiatric nosology, and this despite a number of nomenclatural divergences.

2. The classification proposed by the American Medico-Psychological Association and adopted by the United States Government for practical war work is a suitable reference table for statistical purposes of the major groups and clinical types of mental disease.

3. The classification may be somewhat inadequate for the purpose of general and psychopathic hospital practice, but a slight revamping might resolve this difficulty.

4. The American Medico-Psychological Association's classification appears to follow an etio-

logical ordering borrowed ultimately from reputable German sources, and this etiological ordering is a good one if a certain etiological viewpoint is in mind.

5. The question is raised, whether it would not be better to order the groups and types of mental disease in a pragmatic rather than a theoretical order, that is, in an order having therapy in mind rather than an order having etiology in mind?

6. The writer proposes such a pragmatic order of certain great groups or orders of mental disease, corresponding with the botanical or zoölogical orders.

7. The writer finds that the 22 American Medico-Psychological Association's groups might well be compressed for practical purposes of diagnosis into 11 groups. He finds that the clinical types subordinated to the great groups of the American Medico-Psychological Association's classification correspond more or less accurately to the genera of a botanical or zoölogical classification, and proposes that in practice these sub-groups be considered in order, in general accordance with the principles of botanical or zoölogical taxonomies.

8. This question of how to use a classification may be defined as the question of a key to the grouping of diseases. The key question is entirely independent of the classification or reference table of entities and entity groups, and both the key question and the classification-list question are independent of questions of nomenclature and terminology. Moreover, the writer would insist that the logical process of *diagnosis per exclusionem in ordine* here developed has nothing whatever to do with the order in which data can or should be collected.

CATAPHRENIA.

By this term, Austregesilo⁹ defines a state of mental debility of the dementia type. It differs from dementia, however, in that it may retrogress and complete recovery ensue. He has had a number of patients of this type, the diagnosis wavering between dementia *præcox*, chronic mental confusion and manic depression, and insanity of the confusional or stuporous form, but by the end of six months to three years the marked improvement or complete cure upset all his theories as to the nature of the psychosis. He describes a few cases, all of young men and women, of this acquired psychic deficit which may recover or may progress to

actual dementia praecox, chronic mental or catatonoid manic-depressive sanity.

PREMATURE BLANCHING OF THE HAIR.

Lutati¹⁰ relates that the hair of an artillery captain of 24 turned almost completely white during the two days of the battle on the Piave. A young lieutenant had barely escaped being taken prisoner by the enemy and part of the hair on one side turned white in the course of a day or two. In another case a railroad man of 38, after a bombardment of this train, had all his hair, brows and beard, drop out. As they grew again, they came in white, but by the end of eight months the eyebrows and beard had returned to the former chestnut color but the scalp hair was still white. Another soldier noticed a long patch of white hairs on the side of his head the morning after a battle. The white strip was still plain eight months later, when Lutati first saw it. He has witnessed further the premature progressive blanching of the hair in several aviators, and this is not uncommon in men who have spent some months at the advanced front. He regards it as an indication of nervous instability, liable to make trouble later. In connection with these cases personally observed, he cites a number of the classic instances on record.

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ous arthropods, fish, and coelenterates from the standpoint of medicine. Other additions include new material dealing with the preparation of Dakin's solution, with Mosenthal's nephritic test diet method of studying renal functioning, and with information about the most important communicable diseases. Many of the older illustrations have been replaced by more instructive ones. The size of this edition has been increased by sixty-two pages.

University of Kansas School of Medicine.

The annual catalog for 1917-18 of the University of Kansas describes the history, organization, equipment, and courses offered by the School of Medicine. In 1880, the "Preparation Medical Course," under the administration of the College, was established. This continued until 1899, when the School of Medicine was definitely organized. In 1905, the Kansas City Medical College, the Medico-surgical College, and the College of Physicians and Surgeons were merged into the last two years of a four-year medical course under the direction of the University of Kansas. The hospital has accommodations for sixty-five patients, furnished by free patients, by county cases, and by recommended patients who cannot afford to pay for professional services. The out-patient department offers opportunities for students to study and examine ambulant patients under competent supervision in the clinic.

The Training School for Nurses, established in 1906 at the Bell Memorial Hospital, is a division of the School of Medicine and offers a course extending over two and one-half years. The hospital contains sixty-five beds and receives all classes of patients except those suffering from dangerous contagious diseases or mental troubles.

The Proteomorphic Theory and the New Medicine. By HENRY SMITH WILLIAMS, B.Sc., M.D., LL.D. New York: The Goodhue Company. 1918.

"The Proteomorphic Theory and the New Medicine" offers to the medical profession a new therapeutic method. In this book, the author has recorded his personal discoveries and experiences in the use of proteals, a non-toxic vegetable protein derived chiefly from seeds. The theory is advanced that these proteins, hypodermically introduced into the parenteral system, result in non-specific responses which are beneficial in the treatment of practically all conditions of disturbed protein metabolism, such as anemia, toxemia, asthma, arteriosclerosis, rheumatic arthritis, goitre, cancer, and tuberculosis. The theory presented in this book is at present too new to be accepted as infallible; but it opens a new field in therapeutic treatment which deserves consideration, and is justified by the results contained in this volume.

Book Reviews.

Practical Bacteriology, Blood Work, and Animal Parasitology. By E. R. STITT, A.B., Ph.G., M.D. Fifth Edition. Philadelphia: P. Blakiston's Sons & Company. 1918.

The progress made by the medical work of the present war has necessitated an extensive revision of this work, "Practical Bacteriology, Blood Work, and Animal Parasitology." The subject of agglutination as applied to grouping meningococci and pneumococci has been considerably enlarged, and the Dreyer method for comparison of agglutination results in the use of typhoid and paratyphoid vaccines has been added. A new chapter describes poison-

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STATEMENT OF SIR ARTHUR NEWSHOLME.

ENDORING the public health program, being inaugurated jointly in America by the American Red Cross and the United States Public Health Service, Sir Arthur Newsholme, one of England's foremost medical specialists, who has just come from the Red Cross conference at Cannes, France, recently described the work of the conference at Red Cross Headquarters.

Sir Arthur is one of the famous group of scientists and health experts assembled at Cannes by the five great world powers to advise the committee of Red Cross societies which is shaping the program to be submitted to the congress of Red Cross societies at Geneva thirty days after peace shall have been declared. At the top of his profession in his own country, where he has held many positions of importance along public health lines, he is best known to the medical profession of other countries as an

expert in tubercular work and in infant mortality matters.

Following his introduction by Willoughby G. Walling, vice chairman of the Central Committee of the American Red Cross, Sir Arthur spoke in part as follows:

"It was a happy inspiration of Mr. Davison, the president of the American Red Cross, which led to his calling together the international conference of Red Cross societies at Cannes, with a view to considering means by which the worldwide activities of Red Cross workers might be utilized for the prevention of illness as well as for the treatment of sick and wounded mankind. It is a vision of the future which, I think, will have a great influence on the welfare of mankind, if, as I am confident will be the case, the conception fires the souls of the multitude of Red Cross workers and contributors in every civilized country, and leads them to determine against demobilization of their forces, and to continue their beneficent activities against the horrors of peace, which, in the aggregate, are even more serious to mankind than those of war.

"The statement that the devastation produced by disease in times of peace is even greater than the loss of life from war, may be illustrated by the experience of England and Wales. In the four years, 1911-14, immediately preceding the World War, 2,036,466 persons died in England and Wales, while, to official figures, the total loss of men during the 4¼ years of war was 835,743, including 161,800 presumed dead. The war figures give the entire loss of the British Empire; but it cannot be far from the truth to state that war on the gigantic scale of the war from which we have just emerged has killed in Great Britain about one-third as many as have died in the civilian population in a corresponding period. I do not lose sight of the fact that a large proportion of the civilian deaths occur in ripe old age, and that 28% of the total civilian deaths occur among children under 5, while those destroyed by war are adults and the most virile of our race. But the greater part of the deaths in childhood, as well as in adult life, before old age is reached, are preventable; and in the future will be prevented, given adequate research, intelligent and unsparing applications of knowledge already in our possession, and an avoidance of the public parsimony which, in relation to public health,

constitutes the most serious form of extravagance. That is the ideal which Mr. Davison and his collaborators place before us; and it was to devise plans to this end to enlist the continued coöperation of all Red Cross workers that the conference was called at Cannes.

"The conference held a number of general meetings in which the general policy to be pursued was discussed; and then divided itself into sections dealing with the following subjects: preventive medicine, child welfare, tuberculosis, malaria, venereal diseases, nursing, information and statistics. These sections were not selected as covering the entire ground of preventive medicine, but as forming branches of work in which early investigation and action appeared to be most desirable.

"But first of all the lines of good policy were discussed.

"It is evident that although measures for the prevention of disease constitute a definite governmental function—neglect of which is treason to the communal welfare—even in the more advanced countries our governing bodies have not lived up to their potentialities. In scarcely a single sphere of its work can it be said of any government or of any local authority that what could be done to prevent disease and to avoid human suffering has been completely accomplished. To say this is merely to express the imperfections of humanity singly, or the greater imperfections of committees and councils entrusted with the public purse and the public weal.

"There is, and I think always will be, ample scope for supplementation of official work by voluntary workers, for the experimentation in new and promising work which it is so difficult to initiate in official circles, and for the undertaking of necessary work by devoted volunteers when public opinion and officialdom refuse to undertake it.

"This disposes of the argument that Red Cross activities in the prevention of disease merely prevent the development of official work. The true object of all voluntary workers is to stimulate official public health work, and when in any sphere the latter is fully developed, to welcome the disappearance or reduction of voluntary non-official work, or seek the new means of social help which are always waiting for devoted workers to initiate.

"The proposed organization of Red Cross

agencies for preventive work has already received an imprimature in the draft league of peace; and it would be appropriate that its headquarters should be near if not side by side with the future home of that league. If it receives the full development for which we hoped, it will form, perhaps, a chief instrument in securing peace and continued happiness for mankind.

"The relation of the central bureau of National Red Cross societies will be one of mutual coöperation. The central bureau will provide information and facilities for national work; the actual work will need to be carried out in each country and in the main from funds supplied by that country.

"It is not intended that the National Red Cross shall undertake, much less compete with, work already being carried out either by local authorities or by existing voluntary work. If, for instance, there is a society concerning itself with child-welfare, or the prevention of tuberculosis, or of venereal diseases, the National Red Cross would naturally give such assistance as it could through its voluntary workers in this special work, while leaving untouched existing arrangements. If no such societies existed the National Red Cross might advantageously assist in their formation, retiring as soon as the separate organization was working.

"In countries in which official and existing voluntary agencies scarcely exist, more active work of the Red Cross organization will be called for; in such countries assistance may be needed from the Central international bureau.

"I have referred to the imperfections of government, central and local, in the control of disease. These imperfections indicate one of the most promising fields in which voluntary agencies like the Red Cross can assist toward greater efficiency. Both local and central authorities are elected by the people themselves, and the laws and regulations for the promotion of the public health—and what is even more important, the enforcement of existing regulations—depend for their efficiency on public opinion which we can all assist in forming. The natural tendency on the part of the social enthusiast who has been disappointed in his efforts at reform, is either to retire from the fight or to organize a voluntary organization having the same end in view. This last may, sometimes, be the best line to pursue, though in that case

endeavor should be made to secure friendly relationship with, if not also the active coöperation of, the local authority. But often the most helpful plan is to fight the local election and to secure the election on local governing bodies of men and women who will give those bodies no peace until the necessary reforms are secured."

THE PHYSIOLOGY OF THE AVIATOR.

BEFORE the war, there were scarcely half a dozen men in America who were interested in a field of physiology which has recently developed and has been found to be of great practical value to aviation. A recent issue of *Science* contains an article by Yandell Henderson, who discusses the physiology of the aviator from the point of view of scientific methods employed in testing aviators for war service, corroborated by the experience of men who have actually ascended to various altitudes.

To sketch briefly the present scientific knowledge regarding life at great altitudes, it may be stated that it was first demonstrated by Paul Bert, 1878, that the effects of lowered barometric pressure or altitude are wholly dependent on the decreased pressure of oxygen. With aviation in its present stage of development, it is scarcely possible for an aviator to rise to a greater height than 20,000 feet, where the barometer would be less than half of that at sea level. The influence of low barometric pressure appears to be not mechanical but chemical. When the strain on the oxygen-needing organs is repeated daily, it has been observed that there frequently develops among aviators a condition known as "air-staleness," which becomes so common that in the last year of the war, it has been reported by observers that the majority of the more experienced aviators in the British service were incapacitated for high altitude flying. In order to test our men initially, a laboratory was established at Mineola.

The application of modern scientific knowledge to the problems of aviation required a plan to be worked out for testing the ability of aviators to withstand altitude. An apparatus was devised which made it possible for men to breathe air of a progressively falling tension of oxygen. It consists of a steel tank holding about one hundred liters of air, connected with

a small spirometer to record the breathing, and a cartridge containing alkali to absorb the CO₂ which the subject exhales. Then means were devised for determining functional changes—pulse rate, arterial pressure, heart sounds, muscular coördination, and psychic condition. From these observations, it appears that perhaps the easiest way of making possible high ascents would be by means of oxygen apparatus, and it has been discovered that the Germans have made use of such a device.

As no artificial contrivance, however, can be quite as satisfactory as an inherent power of resistance to oxygen deficiency, the importance of determining this power in candidates for aviation service is obvious. Results have shown that fifteen to twenty per cent. of all the men who pass ordinary medical examinations are not adapted to ascending to heights now required of military aviators. A small per cent., perhaps five or ten per cent., can withstand oxygen deficiency corresponding to altitudes of 20,000 feet or more. When the rebreathing test is pushed beyond man's endurance, it has been noticed that there are two different types of physiological reaction. The first faints from circulatory failure; his heart becomes distinctly dilated: and it requires an hour or two for him to be restored to consciousness. The type better suited to aviation loses consciousness and becomes glassy-eyed and more or less rigid, but does not faint and can be quickly restored. These observations correspond closely to the experiences of aviators who have ascended to great heights.

It is possible that the application of this scientific knowledge to aviation may contribute valuable information essential to the solving of many problems in medicine and hygiene, and the processes involved in acclimatization to a change in atmosphere give promise of affording interesting research in analyzing the problems of life.

THE HOSPITAL DEADLOCK IN TASMANIA.

AN interesting account of the hospital deadlock in Tasmania has been presented in a recent issue of the *British Medical Journal*. A controversy between the local government and the honorary medical staffs of the hospitals arose over the question as to whether or not rich as

well as poor should be admitted. In each of the principal towns in Tasmania, Hobart and Launceston, there is a general hospital with about one hundred and seventy beds, chiefly supported by Government grant. There are also other smaller hospitals on the island, the largest of which is the Devon Hospital at Latrobe with sixty beds, which is also supported mainly by Government aid.

A conflict of opinion arose between the Government of Tasmania and the Tasmanian Branch of the British Medical Association—the Government maintaining that state-aided hospitals should admit rich and poor alike, and the medical profession contending that this practice constitutes abuse of the system of attendance by honorary medical officers. In 1916, inquiry was made into this alleged abuse. Correspondence between the Tasmanian Branch and the Premier failed to settle the difficulty, until the situation became acute, when on St. Valentine's Day, 1917, the Premier was informed that unless well-to-do persons were refused admittance to the hospital, the honorary staffs would be instructed to resign. Further parley and delay resulted in no amicable settlement.

Finally, a bill was passed by the Government admitting rich and poor alike to the hospitals of Tasmania; and in order to make it possible to staff the hospitals, a medical act was passed permitting the admission of Americans to the medical register of the island. It should be said in behalf of the medical profession, however, that it was never the intention of the honorary medical officers to leave the hospital patients with no one to attend them. Quite to the contrary, they were willing to continue their attendance even after their resignations had been sent in until other suitable arrangements could be made, and to attend emergency cases when requested to do so by the resident staff. Their offer, however, was not accepted.

As a matter of principle, it is difficult to pronounce judgment on a situation of this sort. On the one hand, in hospitals supported by the state, it is difficult to positively deny in the interest of health the right of all persons to partake of the benefits offered by these hospitals. On the other hand, the principle at the foundation of the honorary system is not to be entirely ignored. The deadlock in Tasmania seems to indicate that state aid fully applied to hospitals may be incompatible with the honorary system.

The problem is not without significance, both to the public and to the medical profession of the British Empire.

VENEREAL DISEASE CONTROL.

THE problem of venereal disease control in military forces and among the civil population is discussed in the light of recent experience during the war by Wilbur A. Sawyer, in a recent issue of the *American Journal of Public Health*. The topic is one of vital concern. Through the draft, new light was thrown upon the prevalence of syphilis and gonorrhea among young men of the civil population. When large numbers of drafted men were being brought into the Army, it was noticed that the venereal disease rates increased over the relatively low rates at other times. Statistics collected at camps Upton, Dix, Meade, Lee, and Pike for a period of thirty-four weeks, show that less than one-thirtieth of the 45,022 cases under consideration during this period was contracted after enlistment under army conditions. It seems evident, therefore, that the army problem is principally the result of civilian conditions existing before the war.

Probably the greatest sources of venereal disease have been the towns and cities from which the men came. In order to combat the spread of venereal disease, the War Department, with the assistance of the United States Public Health Service and the American Red Cross, took steps to enforce regulations against liquor and venereal disease, and established venereal disease clinics and isolation hospitals in extracantonment zones. Through the Chamberlain-Kahn bill, venereal disease control has been put on a permanent civilian public health basis, which can carry on in time of peace the work started under the stress of war.

In the surgeon-general's program against venereal disease, emphasis was laid on preventing exposure to infection. Efforts were made to educate the soldier through lectures, pamphlets, and moving pictures. Women social workers coöperated so far as possible by winning the confidence and friendship of young girls and keeping them out of prostitution. Now that we have entered upon the period of demobilization, it is the duty of the communities to remain

awakened to the necessity of venereal disease control. No man with venereal disease will be discharged from the army by the War Department until he is no longer infectious. The Public Health Service and the states are continuing their efforts, and need the intelligent and earnest coöperation of communities in their struggle to reduce venereal diseases to a small fraction of their present incidence.

THE MASSACHUSETTS MEDICAL SOCIETY. ANNUAL MEETING.

In this issue of the JOURNAL will be found a revised program of the one hundred and thirty-eighth annual meeting of the Massachusetts Medical Society. The list of papers and the discussions promise "an anniversary" of more than usual interest. War time activities are to be found in the program. On account of the war the membership suffered somewhat but has now returned to a number that is gradually increasing; the treasury suffered temporarily and the annual dinner was omitted; a happening that occurred during the Civil War when there were no dinners in 1861 and 1862, for the same reason. With these exceptions there has been a dinner every year since the first one in 1796. This year the dinner will be served in the Ballroom of the Copley-Plaza Hotel, which will be the headquarters of the society during its two day meeting, as it was from 1913 to 1917.

MEDICAL NOTES.

INTERPRETATION OF THE HARRISON DRUG ACT.—In connection with the Harrison Act it was held by the United States District Court for the Western District of Pennsylvania that a person charged with dispensing narcotic drugs in violation of the act cannot escape punishment by a plea that he was not the owner of the drugs dispensed. The defendant in question contended that he had committed no offense because he said the words of Sect. 2 of the Act, to "sell, barter, exchange or give away" could only apply to owners of the drugs. In rejecting his contention the court said in part: The law-makers were not concerned with the ownership of the drug, but with its un-

lawful distribution. It could matter nothing to the poor victim in the fatal clutches of the drug habit where title was to the narcotic which was thus dispensed to him, every grain of which brought him nearer to the grave. Whether the victim procured the drug from the hand of the physician or through the druggist on an order or prescription of the physician can matter nothing, unless we look blindly at the letter of the act, wholly forgetting its spirit and purpose.

34TH ANNUAL REPORT OF TRUDEAU SANATORIUM.—The annual report of the Trudeau Sanatorium for the year ending November, 1918, marks the completion of its 34th year. Founded originally for the purpose of treating tuberculosis in its earliest stages by Dr. E. L. Trudeau, the institution has continued to grow steadily each year and to accomplish in increasing proportion the gratifying results which its founder hoped to achieve. Each year the institution and the grounds are becoming more beautiful and the number of patients treated has been very large. On August 10 of last year an appropriate memorial to Dr. Trudeau was unveiled in the presence of many of his friends and former patients. A considerable portion of the money necessary for the erection of this memorial was raised by the Sanatorium patients. It is pleasing to the trustees of the Trudeau Sanatorium to see that the work is progressing so satisfactorily.

The weekly cost per capita for the year 1918 has been increased from \$15 to \$16.45 to cover the high cost of materials necessary for the conduct of the sanatorium; and many generous gifts from friends and former patients have enabled the trustees to keep the expenses within reasonable limits. Through the medical department, 109 new patients were examined, 365 admitted, and 259 discharged. As an indication of the widespread educational campaign against tuberculosis which leads physicians to send patients for early observation, is the fact that 42 persons with doubtful or "suspected" tuberculosis presented themselves for examination. All kinds of modern methods are used to aid in diagnosis, and the treatment of positive cases is conducted on a high standard. The rest cottages are continued; a workshop which provides patients with diversion as well as therapeutic benefit, a chapel, a research and clinical laboratory.

an x-ray department, a training school for nurses, and a school for physicians and medical students are maintained at the institution with notable success. During the war, 125 former patients or members of the staff entered various branches of the service. Men from all over the country attend the school. Last year two were Canadian Army officers who were tuberculous, three entered the U. S. Army, and three are in the Red Cross Tuberculosis Service in France and Italy. Each year finds the optimistic spirit of its founder still living in the inmates of the sanatorium, its staff, and its friends.

PSYCHIATRY AND THE WAR.—In the April 18th number of *Science* there is published an article by W. H. Rivers, University of Cambridge, entitled "Psychiatry and the War." Because both groups of physicians (those who treat the insane and those who treat nervous diseases) have been called upon to deal with the large number of cases of psycho-neurosis which the war has brought about, each group has become more closely engulfed with the other. Shell-shock was a term used at the beginning of the war to express the physical effect of shell explosion, but later on it was found that the effect on the soldier was essentially mental. The war has not only proved that mental factors are important, but that certain kinds of mental processes are especially to be taken into consideration, namely, those of emotion and instinct. Striking effects, both mental and physical, have been produced in consequence of war experience among patients; and as a result, psychotherapy has taken its place among the resources of the profession. But there is still a wide difference of opinion with regard to the value of this form of treatment; and although a mental analysis which closely resembles the theory of Freud has been successfully used, it does not go as deeply into the unconscious as that of Freud. The general attitude towards Freud's doctrine has not been a friendly one on the part of the medical profession. The influence of the war upon psychiatry in Great Britain, says Professor Rivers, has been very great. It has also been the case in other countries, and it is thought that with the knowledge already acquired, the large amount of added experience will have considerable weight in bringing about an agreement be-

tween psychologists and the medical profession in the treatment of psychoneuroses of civil life.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 10, 1919, the number of deaths reported was 221 against 234 last year, with a rate of 14.47 against 15.56 last year. There were 30 deaths under one year of age against 42 last year.

The number of cases of principal reportable diseases were: Diphtheria, 42; scarlet fever, 56; measles, 21; whooping cough, 15; typhoid fever, 1; tuberculosis, 67.

Included in the above were the following cases of non-residents: Diphtheria, 6; scarlet fever, 8; tuberculosis, 4.

Total deaths from these diseases were: whooping cough, 2; tuberculosis, 20.

Included in the above were the following non-residents: Tuberculosis, 5.

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.—The regular quarterly meeting of the Massachusetts Association of Boards of Health was held April 24, 1919, at Hotel Brunswick, Boston, Mass., the president, Mr. W. G. Kirschbaum, presiding.

"Diphtheria, the Uncontrolled," was the subject of a paper read by Dr. Bernard W. Carey, epidemiologist, State Department of Health. Discussion by the members followed, which brought out many interesting facts.

The value of immunization and the use of toxin-anti-toxin were shown. The advantages of culturing wherever possible was also clearly pointed out. Emphasis was placed on the tendency of many physicians to give too small dosage of anti-toxin in the early stages of diphtheria.

W. H. ALLEN, M.D.,
Sec'y M.A.B.H.

AWARD OF CITATION TO WOMAN PHYSICIAN.—Dr. Harriet M. Gervais, who is doing relief work in Belgrade, Serbia, has been cited for conspicuous service. Dr. Gervais is connected with the American Women's Hospital Unit of New York, and is located in Belgrade, Serbia. She graduated from Tufts Medical School in 1912. Dr. Gervais sailed last January under the direction of the Red Cross.

BOSTON CITY HOSPITAL TRAINING SCHOOL FOR NURSES.—The graduating exercises of the class of 1919 of the Boston City Hospital Training School for Nurses were held in the Cheever Amphitheatre of the Boston City Hospital on Friday, May 23. The exercises were followed by a reception at the Vose House.

COURSES IN INDUSTRIAL HYGIENE.—The School of Public Health of Harvard University and the Massachusetts Institute of Technology has announced the courses to be offered in industrial hygiene in the year 1919-1920. They include courses in applied physiology of industry, methods of air analysis, industrial toxicology, vital statistics, industrial sanitation, preventive medicine and hygiene, industrial health administration, employment management, workmen's compensation and the legal aspects of industrial disease, nutrition, industrial surgery, orthopedic surgery, and industrial medicine. A description of these courses may be found in a catalogue published by the Committee on Industrial Hygiene of the Harvard Medical School.

SMITH COLLEGE TRAINING SCHOOL FOR SOCIAL WORK.—The Smith College Training School for Psychiatric Social Work was organized a year ago as a war emergency course. The success of this school, together with the increasing need of medical social workers in dealing with social reconstruction problems, has led to the establishment of a permanent training school for social work at Smith College, with courses in psychiatric social work, medical social work and community service, and child welfare. Social problems are approached from a psychological point of view, and students are made acquainted with the scientific application of biology, psychology, sociology, psychiatry, and medicine to social problems.

REPORT OF THE BOSTON ASSOCIATION FOR THE RELIEF AND CONTROL OF TUBERCULOSIS.—The Boston Association for the Relief and Control of Tuberculosis has made its fifteenth annual report for the year ending October 31, 1918. The objects of this Association are:

To promote a careful study of conditions regarding tuberculosis; to educate public opinion as to the cause and prevention of tubercu-

losis; to arouse general interest in securing adequate provision for the proper care of tuberculous patients in their homes or hospitals and sanatoria; and the work of the Association is carried out by making special and detailed studies of the cause of tuberculosis and the care of tuberculous patients; by carrying on experiments in social betterment looking toward the improvement of health and living conditions; by lectures, exhibits, and the distribution of literature; by initiating legislative bills pertaining to health, supporting good measures, and opposing unwise ones.

During the past year the Association has tried to keep its various interests together and at the same time help the community in war activities. The secretary, Mr. Seymour E. Stone, is now doing duty in Rome. The Committee on Health and Industry has progressed rapidly in its work and calls from all over Massachusetts for public health nurses have been answered promptly. Educational propaganda has been distributed broadcast with the result that better coöperation from the public is being realized daily. Prendergast Camp for the treatment of arrested or quiescent cases has cared for 59 patients and the work of the Committee of Health in Industry has been greatly enlarged. However, in view of the increase in death rate in 1917 of 200 over 1916, the work of the Association is still demanding vigorous support. Post-war tuberculosis problems will have their effect on industries and health before very long. General health education is a very strong point in the campaign, especially since the recent epidemic of influenza. With the return to normal occupations many who have been working hard and for long hours in war industries will doubtless need to present themselves for examination.

During the coming year it is planned to carry on the work of the Boston Association under the auspices of the Red Cross, and in this event the amount of its funds for furtherance of the good work will be proportioned to the number of members of the Red Cross in this community as compared with the rest of the country. Careful study of tuberculosis as carried out so successfully in the past has been generously aided during 1918 by friends and members of the Association; and the treasurer's report showed a balance of \$3,830.58 remaining on November 1, 1918, after payments of the various necessary expenses had been met.

The Massachusetts Medical Society.

Program of the one hundred and thirty-eighth anniversary, Tuesday and Wednesday, June 3 and 4, at the Copley-Plaza Hotel, Boston.

GENERAL INFORMATION.

A Bureau of Information will be maintained by the Committee of Arrangements during Tuesday and Wednesday in the lobby of the Copley-Plaza Hotel, the headquarters of the Society during the Annual Meeting.

All Fellows are requested to register and procure their dinner tickets as early as possible at the Bureau of Information.

The Annual Dinner and all General and Section Meetings will be held at the Copley-Plaza Hotel. During both days of the meeting the facilities of the hotel will be at the disposal of the members of the Society, and parking space for automobiles, with supervision, will be provided.

Fellows of the Society desiring to spend Tuesday or Wednesday night in Boston can secure rooms by communicating in advance, either with the chairman of the Committee of Arrangements, or directly with the hotel.

The Boston Medical Library, 8 The Fenway, will be open for the inspection and use of the Fellows during the days of the meetings.

The Harvard Medical School, 240 Longwood Avenue, and the Tufts College Medical School, 416 Huntington Avenue, will be open for inspection by the Fellows both Tuesday and Wednesday.

JUNE 3, 1919

TUESDAY MORNING

There will be clinics and operations on the surgical services, and ward visits on the medical services at the following hospitals:

BOSTON CITY HOSPITAL.

Operations in the Surgical Amphitheatre and in the smaller operating rooms on the Surgical Floor, beginning at 10 o'clock.

Operations in the Gynecological Operating Rooms, Ward 8 and Ward 11, by members of the Gynecological Staff, beginning at 10 o'clock.

Exhibition of medical cases in the Medical Wards by members of the Medical Staff, beginning at 9.30 o'clock.

MASSACHUSETTS GENERAL HOSPITAL, SURGICAL AMPHITHEATRE.

1. Dr. G. C. Shattuck: Some Fallacies Concerning Percussion, 10 A.M.
2. Dr. W. Whittemore: Acute Empyema, 10.10 A.M.
3. Dr. G. W. Holmes: X-ray Treatment of Thyrotoxicosis, 10.20 A.M.
4. Dr. R. B. Greenough: Diseases Amenable to Radium Treatment, 10.30 A.M.
5. Dr. W. H. Smith: Influenza as Recently Seen on the West Medical Service, 10.40 A.M.
6. Dr. F. T. Lord: The Crisis in Pneumonia, 10.50 A.M.
7. Dr. C. A. Porter: Plastic Surgery of Frontal Defects, 11 A.M.
8. Dr. C. L. Scudder: Certain Facts Concerning Chronic Ulcer of the Stomach and Duodenum, 11.10 A.M.
9. Selected Operations by the Surgical Staff, 11.20 A.M. to 1 P.M.

PETER BENT BRIGHAM HOSPITAL.

Ward visits on the Medical Service from 10 to 12 o'clock; operations in the Surgical Building from 9 to 12 o'clock.

CARNEY HOSPITAL.

Operations will be performed on the Surgical Service and visits made in the wards by the Medical Service, from 9 to 12 o'clock.

CHILDREN'S HOSPITAL.

A surgical clinic will be given in the amphitheatre and ward visits will be made by the Medical Staff from 9.30 to 12 o'clock.

FREE HOSPITAL FOR WOMEN.

Demonstrations of various operative methods in plastic surgery of gynecology, beginning at 7.15 A.M.

INFANTS' HOSPITAL.

Clinics will be given, beginning at 9 o'clock.

BOSTON LYING-IN HOSPITAL.

There will be ward visits and operations at 10.30 o'clock.

BOSTON STATE HOSPITAL—PSYCHOPATHIC DEPARTMENT.

A special ward visit and a clinic will be given at 10.30 o'clock. The laboratories will be open for inspection.

ANNUAL MEETING OF THE SUPERVISORS

FOYER, COPLEY-PLAZA HOTEL, 11.30 O'CLOCK

TUESDAY NOON

ANNUAL MEETING OF THE COUNCIL, FOYER, COPLEY-PLAZA HOTEL

TUESDAY AFTERNOON

MEETING OF THE SECTION OF MEDICINE

FOYER, COPLEY-PLAZA HOTEL, 2.30 O'CLOCK

Officers of the Section of Medicine

Dr. George A. Bancroft, Chairman, Natick.
Dr. William David Smith, Secretary, Boston.

1. Transmission of Influenza.

Dr. James P. Leake, F.A. Surgeon, U. S. Public Health Service, Hygienic Laboratory, Washington, D.C.

Discussion opened by Dr. J. J. Keegan, U. S. Naval Hospital, Chelsea, Mass.

2. The Bacteriology of Secondary Pneumonias.

Dr. Henry T. Chickering, New York City.
Discussion opened by Dr. S. Burt Wolbach, Boston.

3. Lung Pathology in Influenza Pneumonia.

Dr. S. Burt Wolbach, Boston.
Discussion opened by Dr. Ernest W. Goodpasture, Boston.

4. Clinical Thoughts on Influenza.

Dr. Everett A. Bates, Springfield, Mass.
Discussion opened by Dr. P. Challis Bartlett, Newton.

5. Treatment of Influenza Broncho-pneumonia by the Use of Convalescent Human Serum.

Dr. William R. Redden, Boston.
Discussion by Dr. Frederick T. Lord, Boston, Dr. Edwin A. Locke, Boston.

6. Management of Empyema following Influenza.

Dr. Wyman Whittemore, Boston.
Discussion opened by Dr. Halsey Beach Loder, Boston.

MEETING OF THE SECTION OF SURGERY

STATE DINING-ROOM, COPLEY-PLAZA HOTEL, 2.30 O'CLOCK

Officers of the Section of Surgery

Dr. Howard A. Lothrop, Chairman, Boston.
Dr. Hilbert F. Day, Secretary, Boston.

1. **Late Treatment of Bone Infection.**
Dr. F. J. Cotton, Boston.
Discussion opened by Capt. Allan Rice, M.C., U.S.A., Springfield; Lieut. Frank W. Marvin, M.C., U.S.A., Cambridge; Lieut. C. W. Peabody, M.C., U.S.A., Boston.
2. **The Use of the X-Ray in**
 - a. **The Differential Diagnosis of Common Bone Lesions,**
 - b. **Accurate Diagnosis of Injuries of the Atlas and Axis.**
Dr. A. W. George, Boston.
Discussion opened by Dr. Samuel W. Ellsworth, Quincy; Dr. George W. Holmes, Boston.
3. **Certain Diagnostic Aspects of Medico-Surgical Diseases of the Gastrointestinal Tract.**
Dr. C. W. McClure, Boston.
Discussion opened by Dr. J. H. Pratt, Boston; Dr. William C. Quinby, Brookline.

MEETING OF THE SECTION OF TUBERCULOSIS

BALLROOM, COPLEY-PLAZA HOTEL, 2.30 O'CLOCK

Officers of the Section of Tuberculosis
Dr. Henry D. Chadwick, Chairman, Westfield.
Dr. E. O. Otis, Secretary, Boston.

1. **Diet in Tuberculosis.**
 - (a) Dr. I. J. Clarke, Haverhill, President of Haverhill Tuberculosis Association.
 - (b) Dr. Roy Morgan, Assistant Superintendent and Physician, Westfield State Sanatorium.
Discussion opened by Dr. William R. P. Emerson, Boston.
2. **Community Machinery for the Discovery of Tuberculosis.**
Dr. Donald B. Armstrong, Executive Officer, Community Health Demonstration, Framingham.
Discussion by Dr. John B. Hawes, 2d, Boston, and Dr. Lewis M. Palmer, Framingham.
3. **Rehabilitation of Tuberculous Soldiers.**
Dr. Chas. E. Perry, Superintendent, Hampshire County Sanatorium, Late Captain, Medical Corps, U. S. A.
Discussion opened by Mr. Seymour H. Stone, Secretary, Boston Tuberculosis Association, Late Captain, American Red Cross in Italy, Tuberculosis Department.
4. **Post-influenzal Tuberculosis.**
Dr. Timothy J. Murphy, Assistant Physician, Boston Hospital for Consumptives.
Discussion opened by Dr. F. R. Hunt, Resident Physician, Boston Hospital for Consumptives.

TUESDAY EVENING THE SHATTUCK LECTURE

FOYER, COPLEY-PLAZA HOTEL, 8 O'CLOCK
By Dr. Francis G. Benedict, Director, Nutrition Laboratory, Carnegie Institution of Washington.
Subject: Energy Requirements of Children from Birth to Puberty.

After the lecture there will be music and refreshments in the Ballroom.

JUNE 4, 1919
WEDNESDAY MORNING
ONE HUNDRED AND THIRTY-EIGHTH ANNIVERSARY

FOYER, COPLEY-PLAZA HOTEL, 9.30 O'CLOCK
Business of the Annual Meeting.

The following papers will be presented:

1. **What General Surgery has Gained from the War.**
Dr. Hugh Cabot, Boston.
2. **What Neurological Surgery has Gained from the War.**
Dr. Harvey Cushing, Boston.
3. **Empyema.**
Dr. Homer Gage, Worcester.
4. **Empyema in Children.**
Dr. Frank S. Churchill, Boston.
Discussion of the papers on empyema by Dr. Lincoln Davis, Dr. Wymian Whittemore, Boston.

WEDNESDAY NOON

FOYER, COPLEY-PLAZA HOTEL

The **Annual Discourse** will be delivered by Dr. Samuel Crowell, Dorchester. Subject: The Reflections of a Physician Who Stayed at Home.

WEDNESDAY AFTERNOON

MEETING OF THE SECTION OF HOSPITAL ADMINISTRATION

FOYER, COPLEY-PLAZA HOTEL, 2.30 O'CLOCK

Officers of the Section of Hospital Administration.

Dr. George G. Sears, Chairman, Boston.
Dr. Channing C. Simmons, Secretary, Boston.

1. **The Treatment of Venereal Diseases in Hospitals and Dispensaries and the State-approved Clinics for the Treatment of these Diseases.**
Dr. Eugene R. Kelly, Boston.
Discussion opened by Dr. C. Morton Smith, Boston.
2. **Relation of the Trustee to the Medical Staff and His Duty to the Hospital.**
Mr. C. H. W. Foster, Trustee of the Massachusetts General Hospital.
3. **The Relation of the Medical Staff to the Trustees and Their Duty to the Hospital.**
Dr. E. H. Nichols, Boston.
Discussion opened by Dr. H. B. Howard, Superintendent, Peter Bent Brigham Hospital.
4. **Reconstruction Hospitals, Military and Civil.**
Major F. J. Cotton, M. C., U. S. A.
Discussion opened by Dr. R. W. Lovett, Boston.
5. **Case Records and Histories in the Smaller Hospitals.**
Dr. H. P. Stevens, Cambridge.
Discussion opened by Dr. Homer Gage, Worcester.
Superintendents of hospitals in New England are cordially invited to attend and take part in the discussion.

WEDNESDAY EVENING 7 O'CLOCK

The **ANNUAL DINNER** will be served in the Ballroom of the Copley-Plaza Hotel, promptly at 7 o'clock. Dress suits not necessary.

Tickets for the Annual Dinner at one dollar apiece may be obtained at the Bureau of Information during the two days of the meeting by those Fellows whose current dues are paid.

Correspondence.

MEDICAL VETERANS OF THE WORLD WAR.

Boston, May 13, 1919.

Mr. Editor:—

A movement to organize a society to be known as Medical Veterans of the World War has been inaugurated by men connected with the office of the Provost Marshal-General.

A constitution and by-laws have been prepared and a limited number of application blanks for membership have been sent me which I have distributed among medical men connected with the draft boards, as I happen to have the official list of such men. I am informed that a further supply of blanks will be sent the Secretary of the Massachusetts Medical Society for distribution.

According to Section 2 of the constitution and by-laws, all medical officers, Contract surgeons of the United States Army, and acting assistant surgeons of the United States Public Health Service who have served in the Medical Corps of the United States Army, United States Navy, and United States Public Health Service, and all medical members and medical examiners of Local, Medical Advisory, and District Boards, officially appointed by the President of the United States, the Provost Marshal-General of the United States Army, and the Governors of the various states are eligible for full membership. Members of the medical profession of allied nations who have been in service of their governments during the World War are eligible for associate membership.

Dr. Hubert Work of Pueblo, Colorado, Speaker of the House of Delegates of the American Medical Association, is acting as President, and Dr. F. F. Russell, M.C., U.S.A., Army Medical School, Washington, D.C., is acting as Secretary.

A meeting for the purpose of effecting a permanent organization is to be held at Atlantic City on the afternoon of Tuesday, June 10, and a subsequent meeting is planned for Friday evening, June 13.

The following is a copy of the application blank sent me by Dr. Craig, Secretary of the American Medical Association.

Very truly yours,

FRANK G. WHEATLEY.

APPLICATION FOR MEMBERSHIP IN THE MEDICAL VETERANS OF THE WORLD WAR.

City	County	State
	Number	Street

Date

I hereby apply for membership (or associate membership) in the Medical Veterans of the World War. I served during the period of the war as indicated below, as

1. An officer in the Medical Corps of the United States Army.
2. A Medical Officer in the United States Navy.
3. A Medical Officer in the U. S. Public Health Service.
4. A Contract Surgeon, United States Army.
5. An Acting Assistant Surgeon, U. S. Public Health Service.
6. A Medical Member Local Board No. at
7. A Medical Examiner Local Board No. at
8. A Member of the Medical Advisory Board at

I was appointed to the position checked above by

I served from to

I served in during the period

(The United States or in a foreign country; state where)

from to

as

(Brief history of service, giving units, dates, and positions held; use reverse of this sheet and attach additional paper if necessary.)

..... M.D.
(Full name of applicant)

Application for membership, with a fee of \$1.00, should be mailed to the Secretary,

Col. F. F. RUSSELL, M.C., U.S. Army,

Army Medical School, Washington, D.C.

INDUSTRIAL ETIOLOGY.

Boston, May 7, 1919.

Mr. Editor:—

It is interesting to note how an analysis of an industry, or particular occupation thereof, will sometimes clear up an otherwise baffling etiology and diagnosis of a disease.

At the annual meeting of the Suffolk District Medical Society, Dr. Drinker, in his talk on "An Unusual Type of Metallic Poisoning," gave a very interesting and vivid description of a gastric and neurological symptom complex occurring among a few manganese workers. The extremely heavily manganese laden atmosphere and the wide magnetic field created by the large magnets employed in that industry were described in detail. The metal was considered by Dr. Drinker the probable etiological factor of this disease.

The writer takes this opportunity to record another case of occupational origin. That some occupations are the direct cause and etiological factor of certain diseases, such as wool-sorters' disease, boiler-makers' deafness, etc., is known to everyone. Here we can readily see the cause and effect—the infected wool in the former and the concussion to the labyrinth or the dislocation of the ossicles in the latter. In other cases where the entire toxicology has not been worked out in full, and where it happens in only a few among the very many employed, so that it appears like an individual idiosyncrasy, we are still justified in considering it a cause, though only empirically for the present. The case I am about to describe is that of a man of 38, photographer fifteen years, who became afflicted with rhinitis, with constant distressing sneezing and marked coryza. At first he took it as an ordinary cold and used the usual remedies. On Saturday nights he would take a good dose of whiskey to induce sweating and "break up" the cold. He would feel some relief after that, lasting until about Thursday, when the symptoms would reach their height and continue till Saturday, when he would repeat his remedies. This continued for several years at all seasons. It was never infectious at any time. During that long period he had his spurs removed by a specialist and different areas cauterized by another, thinking that might relieve his condition. He also had a neurological examination, which was negative. He took a number of electric baths. All without avail. He felt pretty miserable and was on the verge of giving up his trade and going to California. On investigation it was found that he would develop his pictures on Thursday, Friday, and Saturday, and, by analysis and the process of elimination of the chemicals employed by him, it was found that the platinum preparation (potassium chloro-platinum) used in toning up the pictures, was the offending element. Now there were many others who were using the same preparation and have not been affected by it. He must have been especially predisposed to it. Since giving up the use of the platinum preparation he has not been afflicted. The writer was told recently that platinum paper is employed by very few photographers now.

JOSEPH TRENN, M.D.

The Boston Medical and Surgical Journal

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The Massachusetts Medical Society.

THE ANNUAL DISCOURSE.

NOTE.—At an adjourned meeting of The Massachusetts Medical Society, held Oct. 3, 1960, it was

Resolved, "That The Massachusetts Medical Society hereby declares that it does not consider itself as having endorsed or censured the opinions in former published Annual Discourses, nor will it hold itself responsible for any opinions or sentiments advanced in any future similar discourses."

Resolved, "That the Committee on Publications be directed to print a statement to that effect at the commencement of each Annual Discourse which may hereafter be published."

THE REFLECTIONS OF A PHYSICIAN WHO STAYED AT HOME.*

BY SAMUEL CROWELL, M.D., DORCHESTER, MASS.

THE physician, obliged to stay at home, shut out from the part the medical profession played in the world's greatest military tragedy, had his mind repeatedly disturbed and diverted from its normal course of thought and purpose.

He assumed greater cares and responsibilities. He watched with ever-increasing interest the tide of battle ebb and flow. He read the reports in medical journals and daily press with avidity, and admired, with an admiration tinged with envy, the splendid work done by the members of our profession in uniform. He applauded the devotion of our women, the self-sacrifice of our nurses, and followed, with pride

not unmixed with anxiety, the fortunes of son, daughter, relative, or friend. It is as such an outsider—an onlooker—that I address you.

A marked contrast exists between the present June meetings of this Society and those of one year ago. Relaxation and retrospection have taken the place of the tenseness of war preparation and its attendant anxiety. Today we are readjusting ourselves to the ways of peace; then, the country was facing what seemed a long and bloody war. A seeming apathy existed amongst the members of the medical profession, but, in truth, the members were but conscientiously trying to arrange their affairs in order to make the great sacrifice for their country's sake. A strenuous effort was in progress for the speedy enlistment of the medical profession. No post-mortem is to be held over the methods adopted. The men responded as all true sons of Massachusetts have ever done in the hour of need. As a result of their efforts and those of their colleagues throughout this country and abroad, the wounded soldier, on the battlefields of France today, was—in spite of high explosives and modern engines of destruction.—a fortunate man, compared with his brother of bygone days.

Today, he is cared for by the finest medical skill and devotion the world has ever known.

Then, the condition of the sick and dying was given little consideration. The soldier was fitted

* Delivered before the Massachusetts Medical Society, at Boston, June 4, 1919.

out to fight, but having fought and fallen, there was accorded him few, if any, of the aids and comforts to enable him to endure his sufferings or restore him to health and usefulness.

Sad the fate of many a man, on entering such hospitals as then existed, festering with erysipelas and gangrene.

One sixteenth century battlefield stands out clear before us, dominated by the father of French surgery.—Ambrose Paré. There, surrounded by the wreckage and the carnage of war, the wounded and the dead, he refuses in his operations the boiling oil which his assistants proffer him for the control of the flowing blood, as before his doubting and skeptical colleagues he demonstrates to them that the tying of a single ligature around the severed blood-vessel could control hemorrhage better, surer, with far less pain, more humanely and rationally than by the older barbarous and frightful method.

The picture that comes down to us of this scene, primarily, commemorates a momentous anatomical and surgical advance in the treatment of bleeding arteries.

It also depicts the physician in response to the call to serve his country and humanity, where he is ever to be found: whether fighting death near the first line trench or in some lonely hamlet; in some great metropolitan hospital or in some quiet, experimental laboratory where, more frequently than the world knows, such men as Lazeur and Carrel have displayed greater courage and bravery in deliberately exposing themselves to horrible and fatal disease, so that future generations might live, than many a soldier on the battlefield.

We look in vain through the years preceding and the years following Ambrose Paré for some organized attempt to care for the wounded soldiers. Pestilence and disease have pursued and ravaged every camp the world over.

It is not until comparatively recent times that any attempt was made to better the condition of army life. There shines forth from the disease-ridden hospitals of the Crimean War an angel of mercy and hope in the person of Florence Nightingale, who proclaimed the dawn of a better day. But the day was slow in breaking.

The medical aspect of all past military operations in this country down to the present war is a gloomy picture.

That memorable winter spent by our Continental troops under General Washington at Valley Forge was one of want, disease, and death, with supplies spoiling on the road for lack of transportation, due to the apathy of the Continental Congress.

The enteric diseases that accompanied the Civil War were very severe,—more deadly than the bullets on the battlefield.

In '61, it was not until the sick and wounded began to come back, that accommodations were prepared for their reception. Then only were hospitals speedily established at Washington, Baltimore, and Philadelphia.

Specialists were scarcely known at that time in the Government service, and no organized effort was made to reconstruct or place the disabled soldier in a position to help himself. The less said about the Spanish War the better, especially as it came at a time when the medical world held its head pretty high, and boasted of its achievements.

Modern events began to point to a greater efficiency in the medical care of armies, in cantonment and in the field.

The world's attention was attracted toward the Japanese in their war with Russia, and the methods there applied for the welfare of the troops. The intensive study in recent years of communicable diseases, of their causation, of their prevention, and of the suppression of them when developed, had a special application to army life and was the principle upon which the health of the military forces was maintained in the war just terminated.

Especially noteworthy was the typhoid prophylactic vaccine used with such gratifying results in this country amongst the soldiers sent to guard the Mexican border before this present war began. It removed from this war one of the hitherto great contributing causes of sickness and death in army life.

These facts, accompanied by the willing support of the Government and the lavish generosity of the whole country, stimulated the medical profession to do its best in conserving the man power and economic force of the army and the Nation in order to crush the Hun.

While the final accounting of army deaths from disease will be much higher than what is about to be quoted, yet the report issued in the official United States Bulletin during the month of September, 1918, just previous to the out-

break of the influenza, is illuminating: That with over 1,700,000 men over-seas, the army death rate from disease is only 2.18 per 1,000 annually; the death rate for the same age of men in civil life is 6.7 per 1,000. Truly an astonishing statement.

This splendid record of the health of our military forces, during the first twelve months of the war, maintained by the vigilance and skill of our doctors in the army and navy, needs to be more forcibly impressed upon the public mind. Too many still believe the wild tales circulated during the first year of the war as to medical neglect and needless sickness in the cantonments.

The study of communicable diseases is supplanting the earlier work of preventive medicine, which, in reality, is the foundation rock upon which preventive medicine rests.

Up to September, 1918, when we were visited by the influenza, so completely were communicable diseases under control that the eastern menace of the Bubonic plague seemed the only possible disease that might obtain a foothold in the country and seriously affect the health of the people.

One would have felt safe in saying that never again would the civilized world, guarded by its present and fast accumulating weapons of defence against unknown diseases, be ravaged by extensive epidemics similar to the black death which carried off two-thirds of local groups of the population of Europe in the fourteenth century, or the great plague of London in the seventeenth century, when 68,000 people died in a single year. This influenza, this modern scourge, made us doubt as to our security for the future. The influenza, however, has passed by, leaving us with our experiences and our deductions, yet full of uncertainty as to future methods for its prevention and treatment, and while some advancement has been made as to treatment, little has been accomplished as to prevention.

It has taken a great many years from Jenner's discovery of the control of smallpox by vaccination, the suppression of yellow fever in Cuba, and the immunization of individuals to typhoid fever, to bring about our present methods for the prevention and control of communicable diseases.

The medical world felt that it had arrived at a point where it could control the health of communities, depending upon the extent to

which the free actions of people should be controlled by board of health regulations.

However, until a prophylaxis is found for the influenza, such regulations as now exist must be more rigidly enforced. Neglect brings its own penalties.

At the time of the Spanish War in 1898, we were not using the prophylactic vaccine for typhoid fever, but our understanding of camp sanitation was excellent; the value and importance of uncontaminated drinking water was thoroughly appreciated; the proficiency and experience of army surgeons was sufficient to have thoroughly preserved the health of our troops at that time,—yet the cry that swept over the land, of "Remember the Maine," caused our young men to rush to arms unprepared, undisciplined, and untrained. The results, in consequence, were disastrous to health and life. It proved a good, though sad, expensive, and humiliating lesson,—reflecting no credit either on the military or the medical profession.

One class of infectious disease pervades the land, whose etiology, clinical symptoms, and means of suppression, are known to the whole profession. It can be controlled, and its source of infection traced and suppressed in many cases as readily as typhoid fever, and yet it continues to exist. This is the age-old curse of society, commonly spoken of under the general term of "venereal disease." In a discourse of this character, one can hardly go into details as to its extent or its well-known ravages in military and civil life; neither can one more than casually refer to the tremendous amount of work undertaken in order to preserve the health of our troops in this direction by the rigid military discipline enforced upon the men, the work of the army and the navy, the Public Health Service, the Red Cross, the Y.M.C.A., by states and communities, supplemented by the suppression of alcohol. Our own State Department of Health started an excellent work by requesting physicians to report their cases of venereal disease and follow them up, but it is too early, as yet, to judge of its value. Added to these agencies were the earnest efforts of the whole country to protect and preserve the health and welfare of our boys in cantonment, in battle, and in hospital, with the result that there has been awakened and stimulated a hitherto unknown amount of attention toward the suppression of venereal disease.

Previous to the war, a voice was heard here and there sounding a note of warning, repeating the story, emphasizing again and again the unnecessary burden society was carrying as a result of this disease. All would agree that what was said was true, and there the subject seemed to end. The important thing to be remembered at this time is that the interest taken in the subject while the men were in uniform must not flag or be neglected with the soldier returned to civilian life. The menace still remains, for with the army restraints removed, old conditions will return.

It is not generally known to the public that after the men were put in uniform gonorrhea and syphilis were, as other diseases, less prevalent than in civil life.

Extremists have advocated rigid and arbitrary methods in dealing with this subject. It enters so many social phases of life that the medical profession and State authorities are in a quandary how to proceed. It is a burning question, to be handled wisely and promptly. Thoughtful and serious-minded men are considering it from many angles. It is being presented to the public in plainer and more outspoken speech, by educational methods, by literature, by the moving picture, and by attempting to raise in the minds of every one a higher moral responsibility toward others.

To suppress this tolerated infection circulating unrestrained through the land, something stronger is needed than the present feeble laws and State Board of Health regulations; something more is required than the controlling of criminals or the actions here and there of some one individual known to be infecting others. Something more is needed than educational propaganda and moral suasion, though, exceedingly helpful, they will aid to a certain extent; but one must be extremely optimistic to expect these agencies alone to accomplish it. In the end, only when syphilis and gonorrhea are classed and treated by our boards of health in the same way as other communicable diseases will they be fully controlled.

While the war raged and the reports of German atrocities appeared in the daily papers, hardly a physician but reviewed in his mind the relations, many of them extremely pleasant, that existed between himself and those of German descent in this country as well as in Germany,

trying to explain how, even under war conditions, these stories could be true.

As a medical student of five and thirty years ago in Germany and Vienna, there comes to mind many unpleasant instances showing certain characteristics of the medical profession there which help to answer these questions.

Then, fresh from the hospitals of Boston, where the care of the patients came first, and medical instruction so arranged that the patients were benefited greatly by medical teaching, one found that the patients in the Vienna hospitals were simply so much clinical material, and were kept in the hospitals in many instances, so it seemed, so long as they were of use for teaching purposes rather than for their own benefit.

The general impression a student received at that time was that the height and brilliancy of the practice of medicine were to have the findings at the autopsy table bear out the clinical diagnosis made during life.

A shameless disregard of decency or for the feelings of the patients was daily witnessed in the skin and gynaecological clinics, where the women patients were stripped entirely nude and passed around amongst a crowd of gaping students for examination.

One instance comes to mind of a young woman appearing daily at the throat and nose clinic with a beginning syphilitic perforation of her nasal septum. She was there for the students to watch the progress of the disease, see the perforation take place, with the destruction of the septum and the disfigurement of her facial appearance. No treatment was given, for the retarding or the cure of the disease would have spoiled the case for clinical instruction.

It happened one day that the class was examining in a hospital ward a patient suffering extreme distress, while the professor stood by rather jokingly and sarcastically commenting on the stupidity of the class in failing to make either a correct diagnosis or prognosis. The true significance of the situation dawned upon me about the time that the patient fell back in the bed dead.

The remark that I made to my neighbor I remember well: "With this great hospital full of patients, why could not the damned brute let the poor creature die in peace."

Many a student was impressed by the results of German medical scientific research; some at

least were disenchanting by their methods, and felt grateful that they did not exist in American institutions.

But to come back to the present.

The physician who stayed at home coming in closest touch with our great military organization were those serving on the Selective Service Local and District Boards. Through the meshes of their sieves were sifted the men who seemed fit for military duty. Quietly and faithfully working early and late, sacrificing time and strength, they did a patriotic work scarcely recognized, and obscured by more stirring events. Out to secure fighting men, determined none should escape who might serve the purpose, men were occasionally forwarded to the recruiting camps to be returned as unfit. "A man fit to do a day's work ought to be fit to fight," reasoned some examiners, "if he did have a small hernia or a slight apex murmur with no heart enlargement," while other physicians examined with excessive care, feeling mortified when an overlooked defect was found by the army surgeons and the man returned. "Better," reasoned some, "to have now and then a man sent home than one escape."

Many physical defects causing rejection of the men in the first draft were later on in the war passed over and the men accepted. The army surgeon's high physical standard under peace conditions had to be modified as time went on, and the draft doctor learned to appreciate the military point of view.

For example: One draft board in the first draft entrained for camp 270 men, of whom 20 were returned. In the second draft, 163 were entrained, with but 3 rejections at camp.

The local board physicians, on commencing their work, felt that they knew fairly well the standard of health and physical fitness of the men in their localities, but were greatly surprised and disappointed at the results of the examinations. So also were the men themselves. In that hurried preliminary sifting of 2,501,706 men examined throughout the U. S. in the first draft, 730,756, or 29.11 per cent., were rejected.

These rejected men in many instances may well bless the doctors who examined them, as well as the day they stripped for examination. Countless unknown and remediable defects were pointed out, and gratuitous and valuable advice was freely given as the men passed by.

A prominent manufacturer, chairman of a

Selective Service Board in one of our large mill towns, is quoted as saying that never again would he oppose an increase in the town's expenses by reason of the medical and nursing supervision of the children in the public school, especially the care of their teeth. The filthy mouths carried about by so large a part of the community for lack of early care and training, was unbelievable until pointed out by the medical examiner on his board.

The revelation of these remediable defects of the drafted men should furnish added proof of the value, from an economic and business standpoint, of medical supervision, at public expense, of the individual from prenatal life to his grave.

The wonderful transformation which took place in these newly drafted men astonished no one more than the examiners themselves.

Amongst the men were frequently found pale, flat-chested, stoop-shouldered, frail fellows, in whom no physical defects were found: it seemed a crime to send them to war when others seemingly stronger were rejected; yet regular living, physical training, and army life soon created a manly carriage, the results of health and spirits, which filled their hitherto apprehensive relatives and friends with pride and admiration.

These facts will prove among the strongest arguments for universal military training in the future.

In other ways, too, these physicians came to recognize the difference between the military and the civilian point of view with regard to the soldier. This is illustrated by an instance occurring at a dinner given during the early winter of 1918. A well known general severely criticized a previous speaker for referring to the soldiers of our army as our "boys." This general said the soldiers were *men*,—not boys; that they should be addressed always as men: it was a stern, hard job they had to perform, accompanied by privations, hardships, and danger. They should not be coddled by such terms as "boys." That may be the military point of view of it, necessary to the training of a soldier. No criticism is intended here!

The civilian point of view, nevertheless, will always differ. We know our boys are men; that the soldiers of the United States have always fought like men and measured up to the high standard of American manhood. But just so long as there are fathers and mothers, sweethearts and wives at home, the men of our armies

will always be looked upon as their "boys," whether they are 18 or 45. Furthermore, they always have been so called. There was Ethan Allen and his "Green Mountain Boys" of the Revolution; the "boys in blue" and the "boys in gray" of the Civil War; the songs that come down to us from that conflict and those stirring times tell the same story to the tune of "Tramp, tramp, tramp, the boys are marching," and "When Johnnie comes marching home again, hurrah!" and today we hear the rich, broad accents of Sir Harry Lauder's voice singing:

"All the lassies will be loving all the laddies,

The laddies who fought and won."

They are our boys, for we love them—all.

From the very first steps taken to organize our army for the war, it was apparent that the best medical and surgical care the country could supply was to be furnished for the men. The impulse came from our profession to offer its services and give of its best, whatever the sacrifice. The demand came from the government, from the parents of the men, from the troops themselves. The generous public, the individuals of means, lavishly supplied the funds for medical units to go over seas, for the hospitals, and the nurses.

Military medical schools were established for the special training of physicians and surgeons to meet the new conditions and diseases incident to the war. Some one has said that the "quacks and the fakers were swept aside" and little or no opposition was offered by them to vaccination, or other methods for the best and most scientific care and treatment to keep our soldiers and sailors fit.

Did this spirit of patriotism for once overpower the greed for gain in the heart of the charlatan, or was he overcome by the fear of censure?

Why, in times of peace, should not the American people demand of the Government the same high standard of medical proficiency? What is good in times of war should be good in times of peace.

It is a strange inconsistency of the human mind to see legislative committees, in the face of irrefutable and indisputable medical facts, swayed by medical commercialism and misguided sentimentalism, keeping down deliberately and with malice aforethought the standard of medical practice in this Commonwealth.

It is surprising that, while societies such as the Anti-Vaccinationist, the Anti-Vivisectionist, and like cults, flourish in different parts of the country, there is not a strong, energetic society of laymen organized for the purpose of encouraging and demanding legislation along sound scientific lines, insisting that each medical problem coming up year by year should be referred to and reported upon by experts qualified to judge as to their usefulness or worthlessness, and their judgment accepted.

The burden has been borne too long by the medical profession to finance and to fight alone and unaided. Too long have small bands of earnest physicians appeared at the State House on vital matters of public health, to be opposed by a horde of inexperienced and prejudiced objectors, there to be reminded by some committee chairman that if the case was so important, it was strange it was so poorly represented, or when, on the other hand, reputable physicians have appeared in goodly numbers, to have them open to the imputation of trade unionism; in spite of the fact that every measure for preventing disease, and raising the standard of public health lessens the income of every doctor in the Commonwealth. The true and dignified position for scientific medicine is that of consultant and adviser to the Commonwealth. The demand for a high standard of medical efficiency and public health regulations should come from the people, and upon the legislators should rest the responsibility of meeting these requirements.

At our annual meeting last June, we were addressed by a distinguished English guest from overseas. Care and anxiety were written in the lineaments of his face. Dread as to what the future held in store for the Allies he made no attempt to conceal, as he urged the speedy and united help of the medical profession and the American people. His remark that the Americans had boasted they could whip the world, and that the time had now arrived for them to make good, was received with an appreciative smile by his audience. None failed to grasp the deep significance of that remark.

It seemed as if by some process of mental telepathy his challenge to make good was conveyed to every fighting man throughout the land.

The American soldiers crossed the seas and landed on the shores of France at a time when

our Allies had their backs against the wall. Fighting and falling back, fighting and falling back to a point where disaster seemed imminent. Then the Yankees struck!

Our answer today to Sir William Arbuthnot Lane is to be found on the battlefields of France, and in the depth bombs of our destroyers. But let us ever bear in mind that back of our Army and Navy was the conscientious work of the members of the medical profession abroad and in the cantonments at home; not forgetting for a moment their personal sacrifices in order to perform this patriotic service. They have earned and deserve our gratitude and unstinted praise, and they can safely return into the ranks of civil life with the proud consciousness that they played an important part in shaping the destinies of the world and of our great republic.

Original Articles.

INFLUENZA AND STREPTOCOCCUS HEMOLYTICUS.*

BY DAVID B. MEDALLA, M.D., 1ST LIEUT., M.C., CAMP HOSPITAL No. 97, AMERICAN EXPEDITIONARY FORCES.

I WAS called upon by the commanding officer of this hospital to write a paper on a bacteriological subject. Since the notice was very short, I chose to write on a very brief topic which happened to be part of my work while being on duty at Fort Oglethorpe, Georgia, U.S.A. The work consisted of an investigation of a couple of problems from the bacteriological standpoint.

After I completed my course at the Rockefeller Institute, New York, last April, I was sent on duty at Fort Oglethorpe, Ga., to take charge of a Pullman Red Cross Laboratory Car called "Lister." The purpose of such laboratory cars was to take care of any epidemic which might break out in any part of the country. They were then simply attached to a train and sent there for active work. They were completely fitted out with all the necessities of a fully equipped large sized laboratory. On them were an office, bath rooms, cooks, dining-rooms, sleeping quarters, water reservoirs, telephone, and her own electric generator.

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While waiting for an emergency call, I was doing some work in the laboratory of the General Hospital No. 14. Among other problems, there came up the question of what could be the cause of such a number of undiagnosed pyrexias in the hospital, which ran a course of a few days and then dropped down to normal and stayed normal. With the temperature there was also a slight irritation of the throat, nothing to amount to much. The chief of the laboratory turned the problem over to me to work out the cause of those symptoms. I proceeded to make cultures on blood and glucose agar plates as well as tubes from the nose, throat, and sputum. We also made direct smears from the same sources and stained them with various dyes. Carbol fuchsin brought out the bacillus "influenza" in great quantities in case after case. We made examinations on a number of the non-diagnosed pyrexia cases. The only satisfactory method was the direct smear from the sputum stained by carbol fuchsin, while the cultures were not very successful except for a few out of the whole number, which grew upon blood glucose agar. The bacillus "influenza" is a very delicate small comma-like bacillus, usually located between the cilia of the trachea, and if successfully grown upon the culture media does not seem to live very long on it, even though it is transplanted very often. The method of recovering the bacillus from the sputa was as follows: The specimen was collected in a sterile container, a big lump of the sputum was then put into a sterile petri-dish and washed with sterile salt solution; smears were then made and stained by diluted carbol fuchsin steamed for three minutes, washed off with water, and dried between two pieces of filter paper. This investigation helped to find out the cause of the pyrexias and throat irritation, and these cases were diagnosed "influenza."

The next problem came up about a majority of cases which were operated on for appendicitis and acquired a primary infection of streptococcus. The question was, where did it come from? We started up the search for the cause. Cultures were made from every surgeon, nurse, and attendant. The source for cultures were the throat, nose, finger nails, and hand gloves after they had been washed and sterilized. We also cultured the water, scrubbing brushes and soap. Plates with culture media were left

open in various parts of the operating room and kept open for fifteen minutes and a half hour to see if there was anything in the dust of the room. Cultures were then made from the walls of the operating room by means of swabs on blood agar plates. The same was done with the skin scrapings from a number of patients after they were prepared as if they were going to be operated upon. Some patients were sterilized by tincture of iodine after their abdomens were cleaned and scrubbed, while another set were sterilized by benzol and iodine. After the cultures were put away in the incubator for 24 hours they were all examined macroscopically and microscopically; they all had one thing or another which was of no importance. There was one set of cultures, however, which proved to be valuable, and that was the set of cultures made from the wall of one of the operating rooms. It contained a beautiful streptococcus hemolyticus. This seemed to throw a light on the investigation and we soon found out that the habit in that hospital was to have a number of adhesive plasters cut and stuck to the wall of the operating room. After the patient was operated on, sterile pads were put on the region where operated and the strips of adhesive plaster from the wall were quickly put on the patient to hold the dressing. This being the case we concluded that the infection was introduced by the adhesive plaster from the wall. The commanding officer of the hospital then ordered all the walls to be washed and repainted, and above all, to stop the habit of sticking the adhesive strips to the walls. In this way, the almost post operative epidemic was stopped.

A SURVEY OF 100 CASES OF DRUG ADDICTION ENTERING CAMP UPTON, N. Y., VIA DRAFT, 1918.

BY MAJOR GEORGE E. MCPHERSON, M.C., (MEDFIELD, MASS.),
Camp Psychiatrist,
AND
LIEUT. JOSEPH COHEN, PH.D., (NEW YORK CITY),
Examiner, Division of Psychology.

EARLY in June of this year, it became noticeable that a relatively large number of drug addicts were being received at camp. These men passed before selected examining teams, and, as suspected cases, were sent before a spe-

cial board for disposition. Statistics prepared at the time of writing this paper show that of all the rejections in five months, under the Neuro-Psychiatric Service at this camp, 17% were drug addicts, which indicates the importance of this disease. During the five months from May to September, inclusive, 53,000 recruits were examined. In this period of time 178 drug addicts were rejected, approximating 0.35% of the total number of drafted men.

Previous experience in accepting these recruits for service; attempting to treat them with hope of improvement at the base hospital, had so uniformly and ingloriously failed, that the policy of rejecting all positive cases was instituted in June. Most of such men gave a history of numerous trials at various "cures" whose failure was apparently complete.

Where the statement of the recruit was substantiated by positive physical symptoms of withdrawal, or in those cases exhibiting recent corroborative marks of hypodermic needles, such men were at once rejected from the draft and returned to civil life as unfit for military service; otherwise suspects were sent to duty or to the base hospital for further observation. It was found to be perfectly practicable to observe these men in their companies and to have distress relieved by the battalion surgeons, until the necessary discharge papers could be procured and these men dismissed from camp.

A considerable number of such addicts begged for a chance to stay in the service, apparently thinking the army life offered a cure where other attempts had failed. Several were allowed to try it, even against one's better judgment, and without other assistance than regular life and reasonable physical exercise. Most of such experiments failed and emphasized the poor material from which such addicts are fashioned. Although not grading low psychologically, these men are below par in moral sense, judgment or perseverance in good habits.

About July 1 it was decided, with the coöperation of the Psychological Division, to attempt the examination of a set number of drug addicts; to grade them psychometrically; to obtain their histories; all with the hope that the resulting information might prove instructive. Certain it is that in the large cities the Federal law does not successfully suppress the traffic in narcotics. The majority of those men who had drugs in their possession exhibited vials

with drug-store labels and had "permits" from physicians to facilitate the obtaining of drugs.

A large percentage of these men coming into camp had been caught without sufficient supply of drugs, so that they were, in the majority of instances, suffering more or less acutely from their withdrawal. Eighteen men were in good physical condition and showed no mental distress. The remainder (82%) exhibited symptoms varying from feelings of weakness and drowsiness on one hand to conditions of exhaustion and collapse on the other. Marked tremors, especially facial, sweats, abdominal cramps, often severe, and nervousness emphasized the unhappy condition of those who had run short in their supply.

In an attempt graphically to present the histories of these addicts, fifty cases have been charted. This lot of fifty is entirely representative of the entire survey of one hundred or even more, and is evenly divided between whites and negroes. While it is not the purpose of this paper to prove any set of conclusions, the following résumé deserves some attention.

Mental-Age Ratings (Basic Year, Upper Limit). Mental-age ratings secured by the Stanford-Binet, Point-Scale, Performance-Scale and Beta Tests indicate that the intellectual level of drug addicts appearing before the Re-ernit Medical Examining Board does not vary strikingly from that of normal draftees. The average for the group and the median (ignoring fractional parts of a year) both lie in year 12.

It is estimated by the Division of Psychology that the average soldier rating is year 14. While at first it might appear that drug addiction correlates closely with mental inferiority, a comparative examination of drug-addict scores with ratings of men of their own social and educational group would reveal that there is no striking intellectual inferiority. The occupational and industrial histories of these men show them to be, in the majority of cases, unskilled or poorly-trained workers whose schooling, in more than half the cases, did not extend beyond the fifth grade. The mental ratings of healthy men within this industrial-educational group is probably not much (if at all) higher than that attained by the average drug addict.

The basic year and upper limit as designated in the table seem to indicate that there is no unusual scatter along the scale. The appear-

ance of wide scatter, had it occurred, would usually have been taken to be symptomatic of either a psychotic condition, an attempt at malingering, or of a failure on the part of the subject to coöperate in the work of the examination. On the other hand a gradual dropping off on the scale is assumed to be indicative of perfectly normal mental registration. The "Basic Year" and "Upper Limit" columns, if significant at all, show, therefore, that striking mental deterioration has not yet set in in the variety of cases constituting this group. (Note: Where basic year or upper limit are not registered the scale used was either Performance or Beta.)

Years in United States. Ten of the hundred cases here reported are foreign-born; the remainder are native-born. The percentage (90%) remains about constant when larger numbers of drug addicts (not here reported upon) are considered. The cases here presented were contributed for the most part by two army drafts, one "white" and one "negro," the exact numerical strength of which it would be difficult to register accurately. It is estimated, however, that the drafts were of equal size. Upon examining the original data sheets (after completing the tabulation) we find the distribution of cases according to race to be: White, 50; African, 50. To compare the incidence of drug-addiction in the two racial groups would necessitate as preliminary a line of geographical demarcation, for it has been found that cases come in groups from certain urban localities and to be comparatively rare in other cities. The drug addict from a rural community seems to be the very rare exception.

Schooling. More than half of the subjects here reported upon advanced no further than the fifth grade in the elementary schools; 26% are elementary school graduates; 8% of the total number reached the high schools. Two in one hundred graduated from a secondary or professional school.

DRUG.

Addicted to use of heroin exclusively	42
Addicted to use of morphine exclusively	20
Addicted to use of opium exclusively	8
Addicted to use of cocaine exclusively	2
Addicted to use of heroin and some other drug	28
Total	100

MANNER OF TAKING DRUG.

By hypodermic injection	64
By sniffing	16
By hypodermic injection and mouth	12
By smoking	8
Total	100

FIFTY DRUG ADDICT CASES. COMPILATION OF MENTAL AGE

CASE NO.	MENTAL AGE	BASIC YEAR	UPPER LIMIT	BIRTHPLACE	YRS. IN U. S.	SCHOOLING GRADE REACHED	DRUG	AGE HABIT WAS CONTRACTED	LOCALITY IN WHICH HABIT WAS CONTRACTED	DURATION OF HABIT (YRS.)	DAILY CONSUMPTION	FREQUENCY OF DOSE	MANNER OF CONTRACTING
1	9.0	9	—	N. J.	—	3	H.	20	New York City	3	—	—	Associates
2	13.6	9	14	Va.	—	5	M.	13	S. Orange, N. J.	10	5 gr.	6 doses daily	"
3	9.0	9	—	N. J.	—	4	H., C. & M.	25	Newark, N. J.	3	4 gr.	—	"
4	9.0	9	—	S. C.	—	3	H. & M.	26	Mt. Vernon, N. Y.	5	20 gr.	5 doses daily	"
5	11.0	9	12	N. C.	—	5	H., C. & M.	19	New York City	9	20 gr.	4 " "	Taken by advice of "friend when sick"
6	8.7	8	9	Ohio	—	8	H., C. & M.	21	Syracuse, N. Y.	3	—	—	Associates
7	15.2	10	18	N. Y.	—	3	M.	19	Troy, N. Y.	11	15 gr.	5 doses daily	By advice when sick
8	10.6	8	14	N. Y.	—	6	H.	18	Brooklyn, N. Y.	6	15 gr.	7 " "	Associates
9	9.0	9	—	Va.	—	7	H. & C.	16	Newark, N. J.	7	15 gr.	5 " "	"
10	12.3	12	16	N. Y.	—	3	H.	21	Brooklyn, N. Y.	5	11 gr.	3 " "	"
11	14.4	10	16	N. R.	—	3	H.	16	New York City	10	22 gr.	4 " "	Curiosity
12	10.8	10	12	N. R.	—	3	H.	22	Brooklyn, N. Y.	6	17 gr.	25 " "	Associates
13	11.3	9	16	Ore.	—	10	O.	18	China	12	\$4.00	Smokes	"
14	13.5	12	14	N. Y.	—	4	H.	17	Brooklyn, N. Y.	9	25 gr.	6 doses daily	"
15	15.8	14	16	N. Y.	—	7	H.	18	New York City	5	20 gr.	5 " "	"
16	9.9	8	14	Italy	20	0	H.	20	New York City	9	15 gr.	3 " "	"
17	14.00	14	14	N. Y.	—	6	H. & C.	16	Brooklyn, N. Y.	7	12 gr.	4 " "	Worry over charge of manslaughter
18	14.0	14	14	N. Y.	—	7	H.	19	New York City	7	20 gr.	4 " "	Associates
19	12.3	10	16	N. Y.	—	7	H.	19	Brooklyn, N. Y.	10	40 gr.	10 " "	"
20	13.7	10	16	Russ.	12	5	M.	19	New York City	7	30 gr.	6 " "	"
21	15.8	14	16	N. Y.	—	H. S.	H.	20	Staten Island, N. Y.	4	10 gr.	4 " "	"
22	13.0	9	14	N. Y.	—	6	H.	24	Brooklyn, N. Y.	6	18 gr.	15 " "	"
23	13.4	12	—	N. Y.	—	0	H. & M.	17	Brooklyn, N. Y.	3	50 gr.	8 " "	To relieve pain of cancer. Medical adv.
24	11.0	9	12	Penn.	—	1	H. & C.	22	Wilmington, Del.	6	20 gr.	3 " "	Associates
25	11.0	—	—	Del.	—	0	H. & C.	19	Wilmington, Del.	9	50 gr.	8 " "	"
26	9.0	—	—	N. C.	—	0	H. & C.	16	Wilmington, Del.	10	15 gr.	18 " "	"
27	12.5	—	—	N. C.	—	2	H.	22	Wilmington, Del.	6	60 gr.	4 " "	"
28	11.0	—	—	Del.	—	5	C. & H.	20	Wilmington, Del.	9	20 gr.	4 " "	"
29	9.0	—	—	N. Y.	—	7	H.	18	Brooklyn, N. Y.	10	15 gr.	3 " "	Misery and illness; med.
30	9.0	—	—	Del.	—	0	H.	25	Wilmington, Del.	1	5 gr.	4 " "	Associates
31	9.0	—	—	Del.	—	0	C.	19	Wilmington, Del.	3	10 gr.	8 " "	"
32	12.5	—	—	Md.	—	5	H. & C.	22	Wilmington, Del.	6	12 gr.	7 " "	"
33	11.6	9	14	Va.	—	7	M. & H.	17	Brooklyn, N. Y.	6	35 gr.	2 " "	Associates and medication
34	9.6	9	10	Va.	—	3	H.	20	New York City	7	20 gr.	5 " "	Associates
35	11.5	—	—	Mass.	—	8	M.	19	Boston, Mass.	8	10 gr.	4 " "	"
36	8.7	8	9	N. Y.	—	4	H.	17	Brooklyn, N. Y.	6	20 gr.	20 " "	"
37	12.4	9	14	N. Y.	—	5	M.	22	New York City	2	8 gr.	4 " "	"
38	8.5	8	9	Rumania	—	1	H.	24	New York City	6	8 gr.	5 " "	"
39	11.1	9	14	N. Y.	—	2	H.	17	New York City	7	15 gr.	4 " "	"
40	14.8	12	16	Denmark	—	6	M.	24	New York City	5	20 gr.	4 " "	Used on doctor's advice
41	9.5	9	10	Conn.	—	3	H.	13	New Haven, Conn.	13	10 gr.	— " "	Associates
42	15.3	14	18	N. Y.	—	8	H.	20	New York City	2 1/2	12 gr.	3 " "	"
43	14.0	12	14	N. Y.	—	8	H. & M.	19	New York City	6	12 gr.	6 " "	"
44	13.1	10	14	Penn.	—	8	O.	20	New York City	12	34 gr.	12 " "	"
45	16.7	14	18	Canada	10	10	M.	20	New York City	9	9 gr.	3 " "	"
46	13.3	12	14	Mass.	—	11	M.	19	Boston, Mass.	6	14 gr.	4 " "	"
47	11.3	9	14	Ala.	—	4	O.	17	Brooklyn, N. Y.	7	—	2 smokes d'ly	"
48	15.0	14	16	N. Y.	—	8	H.	18	Brooklyn, N. Y.	4	12 gr.	4 doses daily	"
49	13.6	10	16	N. Y.	—	1	H.	23	New York City	3 1/2	20 gr.	6 " "	"
50	8.3	6	12	N. Y.	—	0	O.	13	New York City	12	—	Several smokes	"

* M.
† C.

RATINGS AND PERSONAL DATA. CAMP UPTON, NEW YORK.

CURES AND RE- LATERS	MANNER OF TAKING DRUG	DISEASE HIS- TORY	Alcohol. (Ab- sorption to use of)	CONDITION AT TIME OF EX- AMINATION	CRIMINAL HIS- TORY
Tried cures None	Hypo.	S. and B. fits Pos. ven.	None	Appeared normal Normal	None given 1 yr. possessing drugs; 1 yr. re- formatory, use of
"	"	Neg.	Occasionally whis- key	Drowsy, restless; said he was suffering	None given
Taking "cure" but still uses	"	F. dead of par- alysis	Very heavy before abstention, neg. now	Normal	3 arrests and convictions, causes un- known
None	"	Pos. ven.	Prior to addiction, not now	Slight ennui	Served sentences for assault, ped- dling, burglary
None	"	"	None	Marked tremors, parti- ally under control	None given
Attempted 3	"	Neg.	"	Low spirited, can hard- ly stand; weak	"
King Co. Hosp. abst. 3 mos.	Sniffing	Pos. ven.	"	No nervousness; vacant stare	"
Medicines	Hypo.	Neg.	"	Feels weak; mind is clear and active	"
Belladonna in jail	"	"	Excess before ad- diction	Abst. symptoms	Arrests for drug addiction
6 cures	Hypo. and sniff.	"	Excess before drug addiction	"	Convicted for possession of drugs and larceny
Abst. 3 mos. in jail	Hypo.	"	None	"	1 sentence of 3 mos. viol. of liquor laws
5 cures	Smoking	"	"	" (mild)	Frequent arrests for use of opium
2 cures	Hypo.	Tub. in family	Moderate	" (mild)	"
2 cures	"	Neg.	"	"	"
1 voluntary	"	"	"	"	"
1 yr. in prison	Sniffing	Pos. ven.	Sometimes to ex- cess "after" addic.	Abst. symptoms (re- covering)	1 yr. in prison
1 in hosp	"	Neg.	Excess before drug addiction	Abst. symptoms	1 arrest on charge of manslaughter
2 arrest.	"	"	Excess before drug addiction	" (severe)	2 jail sentences, causes not given
3 cures	Hypo.	"	Excess before drug addiction	"	3 mos. in workhouse for use of drugs
2 in prison	"	"	Moderate	"	"
6 cures	"	Pos. ven.	Moderate	Abst. symptoms (re- covering) tremors at mouth	2 pen. grand larceny; 8 workhouse, minor offense
3 hyacinine	"	"	M. insane; B.	None	6 times for assault
1 belladonna	"	tub.	Neg.	Normal	"
3 in prison	"	Neg.	Moderate	"	"
King Co. Hosp., 46 days	Sniffing	—	"	Abst. symptoms	Arrested but not convicted for use of drugs and assault; 4 jail, drugs
Tried self cure	Hypo. and sniff.	Pos. ven.	"	"	1 pen. larceny
5 hosp. cures	Hypo.	F. tub.	"	"	None given
5 in jail	Hypo. and sniff.	Neg.	"	Headache, blue, and sick stomach	"
None	"	"	"	Weak and cramps in stomach	"
"	Sniffing	Pos. ven.	Lots of gin	Sick and weak all over	"
"	Hypo.	"	Moderate	Weak and cramps in stomach	"
4 days, self cure	Hypo. and sniff.	"	"	Drowsy, cramps, weak	"
None	Hypo.	"	"	General weakness	"
"	"	"	"	Weakness	"
"	"	"	"	Nervous, giddy & weak	"
Self cure	"	"	None	Abst. symptoms	"
Workhouse	"	Neg.	Moderate	"	"
None	"	"	"	"	Negative
Mass. State Hosp.	"	Pos. ven.	Excess before drug addiction	Good	1 arrest for selling whiskey with- out license
War Hosp.	Hypo. and sniff.	Neg.	Moderate	Abst. symptoms	4 mos. for larceny
3 mos.	"	"	"	Good	Negative
Workhouse	Hypo.	"	None	"	Workhouse hosp., use of drugs
None	"	"	"	"	N. Y. C. pen., use of drugs.
Metz & Bellv. Hosp.	Sniffing	Pos. ven.	"	Abst. symptoms	None given
4 cures	Hypo.	Neg.	"	Good	Negative
None	Sniffing	"	"	"	"
Blackwell's Isl. Metropol. Hosp.	Hypo.	"	"	Abst. symptoms	1 arrest and fine, disorderly conduct Blackwell's Island for use of drugs and cure
2 self cures	Smoking	Pos. ven.	Moderate	Weak	2 wks. in jail, disorderly conduct
Metropol. Hosp.	Hypo.	"	Excessive use to break drug habit	Abst. symptoms	Negative
Bondville Hosp.	"	"	None	"	"
Self cure	Smoking	Antbrax M. tub. F. dropcy	Moderate	Normal	10 days for disorderly conduct
"	"	"	"	"	Arrested for possession and use of drugs
Self cure	Hypo.	Neg.	None	Abst. symptoms	Arrest and conviction for drug ad- diction
"	"	"	"	"	Arrest and conviction for use of drugs
Self cure	Sniffing	"	Excessive use be- fore drug addiction	Abst. symptoms (re- covering)	Negative
Self cure	Smoking	"	Heavy present use	Sleepy	"

One man smoked \$4.00 worth of opium per day. By the hypodermic method one took two, five took three, eleven took four, and four took six doses per day; another took 25 shots in one day. By sniffing, the highest doses per day were three in number. By the combination of sniffing and injection of heroin, respectively, three adults took eight doses of each, and one took twenty doses of each in a day.

Daily Dose. The relationship between age of habit and daily dose immediately suggests itself as a worth-while problem. On the face of the available data, however, no positive conclusion can be drawn as to the measure of interrelation for the reason that in the vast majority of cases the daily dose is regulated artificially by the limitations of the individual subject's purse. The personal histories of these men reveal the fact that the drug addict usually regulates his budget affairs with a minimum expenditure allowance for the everyday requirements of living, and a correspondingly definite sum for indulgence in his drug. Though the average drug addict would not admit that his habit is an indulgence, the fact remains that the daily dose is usually determined by the funds available after food and shelter have been secured. The low dose per day was, for morphine, 5 grs.; heroin, 4 grs.; cocaine, 10 grs. The high dose per day was for morphine, 30 grs.; heroin, 60 grs.; cocaine, 10 grs.

Age at Which Habit was Contracted. Of drug addicts within the old draft age limits (21-31), 72% contracted the habit before they were 21 years old. The average falls at 19.6 years; many began at 16, and the oldest in group at 26.

Manner of Contracting. Ten per cent. of the 100 men examined attributed their contraction to the drug habit to medication by professional advice. Eighty per cent. admitted they were introduced to drugs by their friends, their friends very largely being immoral women. The social stimulus seemed in the large majority of cases to be the active agent in propagating addiction. One such addict told of being kept by a widow for immoral purposes and receiving \$15 per week, which he invested largely in drug.

Age of Habit. Of 80 men in this group rejected from the army on account of addiction to drugs,

- 20 had contracted the habit 6 years prior to this examination.
- 12 had contracted the habit 7 years prior to this examination.
- 12 had contracted the habit 9 years prior to this examination.

- 10 had contracted the habit 10 years prior to this examination.
- 20 had contracted the habit 5 years prior to this examination.
- 6 had contracted the habit 12 years prior to this examination.

The other 20 cases vary widely in this respect (from 1 year to 13), although the average duration was 6.76 years.

Cures Attempted. Of the 100 men examined, 36 attempted to cure themselves at home (usually under guidance of physician); 36 were subjected to hospital cures (usually by involuntary confinement in institutions); 28 addicts declared that they had never tried to break the habit. The 72 who had attempted cures give a total record of 156 unsuccessful attempts. Before drawing conclusions from these data it should be borne in mind that the figures here recorded are based, in many instances, on nothing more authentic than the patient's own statements; the motive for exaggerating and lying about the degree of addiction and dependence upon the drug was, in the case of those eager to evade military service, a strong one; a bona fide cure would from the very nature of the circumstances not be likely to come to the attention of the Neuro-Psychiatric Examining Board.

Use of Alcohol. Teetotalers, 36; moderate users of mild intoxicants, 58 (included in this latter group are 18 who, according to their own accounts, were heavy drinkers prior to their contraction of the drug habit). Six declared that they still drink frequently; a symptom which immediately aroused suspicions about the reliability of their stories. These cases were held over at the base hospital for observation by the medical officer; four were subsequently rejected and two accepted for military service.

Disease Histories. Examination of case histories points to the incidence of venereal disease in at least 38% of the cases; here, again, the true per cent. may be somewhat higher, for the source of information, in most cases was the patient's own admission or denial. Less than half the total number gave negative histories. There seems to be no distinct connection between the addiction to drugs and hereditary conditions, certainly none that could be obtained from the patients themselves.

Criminal Histories. The total number of "Yes" answers to the question, "Have you ever been arrested?" was 56. In 18 of these cases the technical charge was that of "Addiction to

drugs." Excluding arrests and confinements on this charge, there are still 38 who served sentences for criminal offenses varying in seriousness from "disorderly conduct" to "manslaughter." In all there were 54 commitments on charges other than that of addiction to drugs.

Sufficient effort was spent on the drug problem by the Intelligence Department of the camp to bring to light a well established system by which plenty of drugs have been obtainable, both outside of and within the camp. It is entirely a problem for the city, not the country district, although the statement has recently been made that the cutting off of alcohol has tended to increase the consumption of drugs in country districts, and especially in the cities of the South.

As time slipped by evidences arose which bespoke a deliberate attempt to foster and, worse yet, to increase the drug habit for the express purpose of obtaining for the victim a discharge from the Army. So many recently acquiring the habit appeared for examination that suspicions were aroused and enough was found to establish definite propaganda in this direction. As a solution, a purely local one for the Metropolitan District of Greater New York, it was suggested by the writer to the City Board of Inebriety, that all drug addicts from New York City be accepted, temporarily at least, for service. By a suitable arrangement such men could be then, by military order, sent to the institution for drug addicts. Here they might well remain as long as necessary for proper observation and classification.

This institution already in existence and with a fairly complete system of records, amplified by possibilities of social service investigations, could readily cull out the old offenders, who might be returned to camp for discharge from the Army. The more recent cases, who might be open to cure under proper treatment, could be returned for duty and sent quickly beyond the likelihood of obtaining the drug. Certainly, if such procedure in such an institution cannot cure such an addict, the Army will prove, by the same token, unable to make him a soldier.

Viewed from any angle at this time, the problem appears to be very largely a civil one, and must take into consideration numerous social factors of extremely baneful influence and which bring their compelling force to bear at a most unfortunate time of a young man's life.

Clinical Department.

REPORT OF TWO CASES OF FRACTURE OF THE CLAVICLE.

By FRANK E. PECKHAM, M.D., F.A.C.S.,
PROVIDENCE, R. I.

IN the BOSTON MEDICAL AND SURGICAL JOURNAL of May 23, 1912, I published a method of treating fractured clavicles.

IN the same JOURNAL of April 23, 1914, a case of non-union, seven and one-half weeks



CASE I, FIG. 1.—Front view of strap arrangement.



CASE I, FIG. 2.—Back view of straps.



CASE I. FIG. 3.—Shows method of holding shoulders while straps are applied and also adjusted from day to day.



CASE II. FIG. 1.—Shows fracture with the shoulder tip down and markedly under.

after the accident was illustrated, treated in the same manner. This identical method has been used continuously ever since. Numerous cases of non-union and others with the fragments riding by have been brought into position and union obtained, without deformity or excessive callous.

There are times when the outer fragment has been pushed downward and directly under the long or proximal fragment. With such conditions the mechanics call for getting the clavicle out to proper length and up into place so that



CASE II. FIG. 2.—Shows the fragment in apposition.

the apposition will be perfect. It is to illustrate these conditions that the two following cases are reported:

CASE 1. This was a very long, oblique fracture. Figures 1 and 2 show the method of strapping. Figure 3 shows the method of holding the shoulders back while assistants apply the straps. The roentgenograms speak for themselves.

CASE 2. In this case the outer fragment was down and under the proximal end. The same method of strapping was used to get the clavicle out to length. After getting the length the fragment must be pushed up into apposition. This was accomplished by pressing down on the proximal fragment with one hand while hard pressure upward was made by the other hand under the elbow. The roentgenograms illustrate the result. This patient was a woman, and there is no "lump" of callous in evidence at all.

On account of the Compensation Act, more disability cases are presenting than formerly, and in fractured clavicles it is not uncommon, now, to have the x-ray show the fragments riding by and the patient unable to abduct the arm. This is evidence, to me, anyway, that the old Velpeau, or similar method, is not very satisfactory. With the method above demonstrated the fragments are held *really* in apposition as *really* demonstrated by roentgenograms. The motion in abduction is not limited by adhesions because the arm is allowed a great deal of freedom during the treatment.



CASE 1. FIG. 4.—Shows the oblique fracture.



CASE 1. FIG. 5.—Several months after union.

Medical Progress.

PROGRESS OF ORTHOPEDIC SURGERY.

BY C. HERMANN BUCHOLZ, M.D., BOSTON.

BONE DEVELOPMENT.

INTRAVITAL staining of new formed bone is known since Belchior's remarkable discovery in 1736. John Belchior, as Keith¹ describes in one of his very interesting historical sketches, found

that bones of dogs which have been fed with madder are stained red. It was in direct connection with Belchior's discovery that Duhamel (1741) discovered the function of the periosteum and John Hunter discovered that the growth of bone entails two distinct processes, one of deposition and one of absorption. Since those times discussion has not ended and it is interesting to note that recent investigators go back to the old treasures of medical science.

Brooks^{2,3} has used sodium alizarine sulphate which has selective vital staining properties when given by mouth subcutaneously and intravenously. On dogs thus treated a piece of the ulna was resected and the defect filled by a graft. The experiments were done in three series: (1) autogenous transplant of living bone with periosteum and endosteum; (2) same without periosteum and endosteum; (3) implant of dried sterile bone. Possibly the transplanted bone matrix and bone cells retain their viability for a short period of time but the identity of the transplanted bone is ultimately lost, as a result of absorption and replacement by new bone. If the periosteum and endosteum are removed, the transplant has no osteogenetic properties. An implant of sterile bone aids in no way regeneration; it results neither in a metaplastic production of bone nor in conducting bone growth. The preservation of periosteum and endosteum is a most important factor in determining the success of the transplant. When placed in parts where there is normally no bone, the transplant, even when it is covered with periosteum and endosteum, shows at first signs of regeneration, but is later completely absorbed. The power of a free transplant covered with periosteum and endosteum to regenerate bone is an intrinsic property and depends upon functional demand. These facts seem to indicate that the living bone transplant with the periosteum and endosteum is the only type of implant which has osteogenetic properties. [Ed. Note—It is very interesting to compare these experimental results with the clinical observations of Gallie.]

Shipley and Macklin⁴ have used azo dye stuffs and metallic colloids for staining the young osseous tissue. The cells resemble macrophages in the avidity with which they eat the vital dye granules. The osseous tissue is stained very darkly, and this color is much more marked in the growing than in the fully developed bone. Especially dense staining marks the actively growing areas of the bone. The primary ossification centers are stained only if they are areas of osteoblastic activity at the time of giving of the dye. This is most evident in the thin bones of the developing skull, where the primary centers are almost without color and the rapidly advancing edge of the membrane bone is heavily stained. It was expected that the osteoclasts would be found loaded with blue granules.

Berg and Thalheimer⁵ have undertaken a series of experiments with the object in view to deter-

mine the fate of the various component tissues which make up bone, where they are transplanted either singly or in different combinations, and also to find out under what circumstances these transplants produce new bone and which elements are capable of generating bone. Cats were used for autogenous transplantation from the tibia upon or into the spleen, the subcutaneous tissue and, most frequently, costal cartilage. The results of these experiments lead the authors to the conclusion that periosteum, endosteum and osteoblasts lining the Haversian canals produce bone when transplanted into foreign tissue; also the cambium layer when adherent to transplanted cortex. Most of the bone will be absorbed in time, but some of the cells resist longer than one year. There is a marked difference in regard to the activity of cells: fully developed adult bone cells do not form bone, whereas very young lacunar cells can reproduce themselves and form bone. The authors give some very excellent microphotographs which show the true bone formed from periosteum transplanted upon cartilage, containing marrow spaces and bone marrow and even formation of an epiphyseal line; proving that bone when it grows into cartilage does so in the same manner characteristic of the normal embryonic development of enchondral bone.

The opinion of Julius Wolff that the bone is the primary seat of deformity is refuted by Keith⁶ who points out that in all static deformities the transformation of bone is the direct result of defective or unbalanced muscular action. He compares the osteoblasts with the scleroblasts of sponges, which form the spicules. In the same manner as one can study on the scleroblasts, so the osteoblasts constantly build and unbuild bone tissue, according to the stress to which they are subjected. Stress is as necessary for their health and activity as exercise is for the living body. The mode in which they build and the lines along which they will deposit their material are determined by the forces which are brought to bear on them.

Davis⁷ has made experiments on dogs to compare the permanence of free transplants of bone and cartilage and has found that the former is much more quickly absorbed than the latter. As the cartilage is flexible, as it can easily be cut in any desired form, and a large supply is always available, it is recommended as material for grafts.

Hodgson⁸ has studied the development of the

tibial tubercle on x-ray pictures of children and young adults in the age of 7 to 20 years and comes to the following conclusions: The centre of ossification develops after the tenth year, in girls earlier than in boys; often in one leg earlier than in the other, but not necessarily earlier in the right leg. The centre of ossification of the tibial tubercle is not always separate from that of the epiphysis: when separate centres exist, union begins to take place in the 14th and 15th year, usually somewhat earlier in girls, and is generally complete at the 18th year. Some clinically normal cases show a radiographic appearance which may be easily mistaken, and has been repeatedly so in the literature, for fracture, avulsion or eroded condition.

TUBERCULOSIS.

According to recent discussions there is doubt in the mind of most orthopedic surgeons whether a tubercular knee joint of an adult ever will heal with good function. Osgood and Bull⁹ believe that synovial tuberculosis may be cured by inflation of the joint with 4% iodoform oil after Brackett's device, a method which is claimed to be superior to simple injections. On the other hand, in cases with bone involvement a permanent recovery cannot be expected and excision becomes the method of choice.

There are two problems under discussion: (1) the method of fixation and, (2) angle of the bones. Most surgeons agree that some means of fixation is necessary to obtain quick and firm union. Osgood and Bull recommend bone plates when the bone is firm and a kangaroo bundle tie for atrophic soft bones.

Galloway¹⁰ takes three bone grafts, one on each side, made of a slice of the condyle of the femur, and one in front, made of the patella. The grafts are held in place by four nails: one from each side and two from front crossing each other, and inserted through special holes in the skin to allow their removal after three weeks. In some cases firm union was seen at that time.

Hibbs¹¹ has obtained firm union and completed cure in five cases of severe tuberculosis by simply fusing the patella, denuded of its cartilage, into a groove made in front of the femur and tibia. The patients stay in bed for six weeks and wear a plaster cast for six to twelve months.

The second point concerns the position of the fused bones. The straight line has been heretofore generally accepted as being the only one

which warrants good weight bearing and proper function. Recently Brackett, from clinical experience, has come to the conclusion that a knee joint ankylosed in an angle of about 30 or 35 degrees is much more convenient in sitting and reduces limping, more or less, sometimes entirely. Osgood and Bull, utilizing Brackett's ideas, recommend an angle of 35 to 40 degrees for patients with sedentary vocations and 15 to 20 degrees for those who have to work standing. Galloway chooses an angle of 15 degrees, while Hibbs places the bones in a straight position.

The observations of Freiberg¹² leave hardly any doubt that direct exposure to sunlight, heliotherapy, represents a weapon in the fight against surgical tuberculosis which is far superior over the simple exposure to fresh air and general hygiene. He made his studies on three almost hopeless cases which had been at his hospital for a long time, but had failed to make satisfactory progress in spite of treatment in recumbency in the open air under very satisfactory conditions. All had open tuberculosis; operations had been done without success. Careful exposure to sunlight, according to Rollier's rules, resulted in a speedy improvement. Abandoning of heliotherapy was followed by retrogression of the disease, thus suggesting the necessity of continuing the treatment during the winter. Freiberg has undertaken to construct some form of a shelter which allows exposure to the sunlight and its ultra-violet rays, at the same time, however, protecting the body from unendurable cold and humid winds.

In six old tubercular joints with fibrous ankylosis Nutt¹³ has obtained a promising amount of motion by the application of radium in the form of pads or injections as well as by drinking radium water. Some of these cases had been previously treated by forcible manipulations and passive exercise without results. The radium treatment brought about a feeling of looseness in the joints, followed in a few weeks by actual and constantly increasing motion. The general tonic effect of the treatment has been especially noticeable.

Calvé¹⁴ has successfully treated three cases of Pott's paraplegia with puncture of the spinal abscess. He uses an especially devised curved instrument which is pushed through the intervertebral foramen into the spinal canal so as to reach the posterior surface of the body of the diseased vertebra.

(To be continued.)

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THE DOCTOR IN PARLIAMENT.

ATTENTION has recently been called to the conspicuous part which has been played by physicians and surgeons in British political history. Demands for more adequate representation of the profession in Parliament in the interest of public health prompts us to review the influence of the profession on parliamentary and political history.

Perhaps two of the most notable examples of the far-reaching influence of professional service are the cases of Sir Robert Walpole and the younger Pitt. It may not be generally known that the life of the former, when threatened by smallpox while an under graduate at Cambridge, was saved by his physician, Dr. Robert Brady, himself a member of the House of Commons for Cambridge University. Dr. Brady, although a thorough Tory, is stated to have said at the time, "We must take care to save this young man, or we shall be accused of having

neglected him because he is so violent a Whig." In the second instance, the life of the younger Pitt was saved by Dr. Addington, a physician who, known in political circles as "the doctor," later held the position of prime minister.

In the development of Irish political history, medical members of Parliament have played a conspicuous part. An illustration may be cited in the case of Charles Lucas, who was an eminent physician as well as an Irish party leader. He first entered public life through his desire to prevent abuses in the sale of drugs, and published a pamphlet which led to the passing of an act by the Irish Parliament for the inspection of medicines. He then began to take an interest in municipal administration and was finally driven into exile by the Irish Government. After having established a successful practice in London, he eventually returned to Dublin and sat in the Irish House of Commons until his death ten years later.

It is to be remembered that the medical and surgical professions have been represented in the British House of Commons by Sir John Gray, M.D., by Sir Doming Corigan, Dr. Tanner, Dr. O'Leary, and others. The conferring of the peerage on Lord Lister was a tribute to the medical profession. In more recent times, the entrance of Michael Foster and Sir William Collins into the House of Commons was welcomed by the political world. Nor is the movement in favor of having medical men in charge of ministerial departments concerned with matters of public health of recent origin; for in 1892-1895, Sir Walter B. Foster, a member of the general medical council and for a long time professor of practical anatomy and medical tutor at Queen's College, Birmingham, held the position of parliamentary secretary to the local government board.

In reviewing these facts, it will be seen that the doctor has long been well known in Irish political life, and has held a prominent position in representing the medical and surgical professions in parliamentary history.

HISTORY AND DEVELOPMENT OF THE RED CROSS NURSING SERVICE.

THE history and development of the Red Cross Nursing Service began in 1908, when steps

were taken to secure a closer affiliation between the American Red Cross and the American Federation of Nurses. At this time, a committee was appointed to find out whether or not it would be practical to establish a Red Cross Nursing Service. It was finally decided that a Committee on Red Cross Nursing Service be appointed, in which the Army, the Navy, the Red Cross, and the Federation of Nurses be represented. Miss Jane A. Delano was appointed chairman of the first National Committee on Red Cross Nursing Service, of which nine members were representatives of the Federation of Nurses. Standards adopted for enrollment by the Red Cross met the requirements for admission to the Army and Navy Nurse Corps, so that regulations were later issued by the Secretary of War making the Red Cross Nursing Service the reserve of the Army Nurse Corps. In 1911, a proclamation was issued by the President of the United States placing on the Red Cross the responsibility of acting as the only relief agency permitted to render aid to the land and naval forces in time of war. In order that the work of the Red Cross might develop along lines acceptable to the Army and Navy, the chairman of the National Committee on Red Cross Nursing Service accepted the appointment as the Superintendent of the Army Nurse Corps in 1909. In 1912, Miss Delano resigned this position in order to devote her entire time to the development of a Red Cross Nursing Service.

Various bureaus were organized under the National Committee on Red Cross Nursing Service for conducting the activities of different departments. In 1915, a Bureau of Nursing Service, functioning under the Department of Military Relief, was organized and was responsible for the selection and assignment to duty of all nurses except Public Health Nurses. A Bureau of Instruction was authorized, which was later changed to the Bureau of Nurses Aids and Instruction. War conditions made it necessary to extend the service rapidly, until in 1917, it was necessary to organize a Bureau of Enrollment. In 1916, the Bureau of Dietitian Service was organized for the purpose of securing the services of trained hospital dietitians for Base Hospital Units then being organized by the Red Cross for overseas service. In May, 1918, the Bureau of Public Health Nursing was reorganized under the Department of Nursing. The variety of activities conducted by these bureaus

seemed to justify the creation of a separate Department of Nursing, which was authorized by the Executive Committee of the Red Cross, December 7, 1917, with Miss Jane A. Delano as director of this department. More than thirty-five thousand American nurses were enrolled and supervised by the Red Cross Nursing Service. The development of the Red Cross Nursing Service has been one of the greatest achievements of the war.



MASSACHUSETTS GENERAL HOSPITAL.

The one hundred and fifth annual report, Section B, of the Massachusetts General Hospital describes the medical and surgical affairs of the hospital for the year 1918. The year has been attended by many difficulties, because the staff has been greatly depleted by entrance of officers into war service. This year, the term of service of surgical house pupils was reduced from fourteen to twelve months; but steps are now being taken to return gradually to the twenty-one months' service of surgical house pupils and the eighteen months' service of medical house pupils. During the influenza epidemic, surgical patients, except emergency cases, were not admitted to the hospital, and the surgical wards were used for influenza patients. During the epidemic, over eight hundred cases were cared for.

In 1918, 6,702 patients were admitted to the wards of the Massachusetts General Hospital, with a total number of 116,321 days of treatment. The average daily cost per house patient was \$4.37. There were 1,236 trips made by the ambulance service. The Out-Patient Department cared for 25,441 new cases. The work of the Social Service Department has been notable and the service rendered by volunteer workers has been extensive and valuable. The Industrial Clinic, established in March, 1916, has developed satisfactorily during the year. Research work in the Children's Medical Department has been limited because three of the members have been absent in war service; at the request of this department, a new clinic has been established in the Orthopedic Department for the purpose of correcting improper posture in children. The Department of Syphilis has received an increased number of patients and the teaching

activities have been amplified. The Clinic for Pulmonary and Non-Pulmonary Tuberculosis has proved the wisdom of its establishment. The research work of the Dermatological Department, though somewhat diminished, has been carried on with special study of the rôle of metabolism and vaso-motor conditions in the production of skin diseases, particularly psoriasis. The Neurological Department has continued to conduct its research activities, and has treated a considerable number of nerve injuries of returned soldiers and sailors. During the past year, there has been established by the Surgical Department a complete system for the carrying out of the Carrel-Dakin treatment of septic wounds. The treatment, employed in all suitable cases, has yielded satisfactory results. Nearly two hundred medical officers have been assigned by the Surgeon-General to the Orthopedic Department for an intensive course in orthopedics. The Infantile Paralysis Clinic has administered six thousand treatments at the hospital and twelve thousand outside the hospital. Detailed statistics are included in the report concerning patients and medical and surgical diseases, together with a summary of surgical operative fatalities for the year 1918.

MEDICAL NOTES.

DAYLIGHT SAVING A MEANS OF HEALTH.—The United States Public Health report for April 4, 1919, offers a valuable suggestion concerning the daylight saving plan now in effect which it would be well for many of us to follow. Since we have added an hour of daylight at the end of the day, would it not be a good plan for us to learn to enjoy outdoor life a bit more? 'Many people are shut in during the day in their offices or in shops who would find walking all or part of the distance to their homes in pleasant weather by far more agreeable to riding in stuffy trains or street cars. Those who became enthusiastic over the idea of the war gardens can continue this year by spending a short time at the end of the day in cultivating a small patch of ground. Countless ways suggest themselves to many people as to how this time shall be spent and it is urged that public health officers everywhere impress upon the people the desirability of spending this extra hour in

the open and thus make the daylight saving a contribution to health.

MORTALITY RATE IN INFLUENZA EPIDEMIC.—In a recent Public Health Report, an interesting comparison in respect to mortality is made between the influenza epidemic of 1889-90 with the present epidemic. Statistics which are probably not complete, but which are as accurate as can be obtained, indicate that in nine of the twelve cities considered, the mortality rate rose to a much higher point during the primary wave of the 1918 epidemic than in the epidemic of 1889-90. In both epidemics, the rate in St. Louis, Minneapolis, and Milwaukee was comparatively low. A comparison of the mortality during eight weeks of highest mortality for the two epidemics in the twelve cities, considered as a single population group, shows that from December 15, 1889, to February 8, 1890, the mortality rate was 26.7, as against 35.2 for the period from September 29 to November 23, 1918. At the highest point of the epidemic the week rate rose to 55.6 in 1918 and to 35.4 in 1889-90.

It is interesting to note that while the curves plotting the two epidemics show considerable irregularity, yet as a whole, a striking similarity is manifested for the same cities considered both individually and as a whole. In all of the cities, the length of the primary wave was quite similar during both epidemics.

MEDICAL INSPECTION OF SCHOOL CHILDREN AS A PUBLIC HEALTH FUNCTION IN ENGLAND.—A report of the recent action on the English Ministry of Health Bill, making the medical inspection of school children a public health function, is included in a recent public health report of the United States Public Health Service. An amendment has been adopted providing for the immediate transfer to the Ministry of Health of the functions of the board of education in regard to the medical inspection and treatment of children of school age. Although on the introduction of the bill it was proposed to combine under one State department the health responsibilities of the local government board, the functions of the insurance commissions for England and Wales, and the duties of the board of education in regard to the health of expectant and nursing mothers and children under school age, it was not considered necessary for the board of education to resign immediately its

responsibility in the medical inspection of school children. The new amendment, however, proposes this additional transfer of duties to the Ministry of Health, and was carried with practically unanimous feeling in its favor. In order not to burden the new ministry too heavily at the outset, part of the services now rendered by the board of education will be transferred immediately, and part later on. In view of the fact that the object of the English Ministry of Health Bill was to take over the health services from the various departments of the State and to prevent overlapping of services, it would seem consistent that the medical inspection and treatment of school children should not be left outside its scope.

DEGREES IN PUBLIC HEALTH.—Measures for standardizing the various degrees and certificates offered in the public health service have been considered recently at a meeting held at Yale University. Representatives of Johns Hopkins University, the Massachusetts Institute of Technology, Harvard University, New York University, Yale University, and the University of Pennsylvania attended the conference. A recent issue of *Science* has published the following resolutions which were adopted at the meeting:

1. That the degree of Doctor of Public Health (for which the abbreviations should be Dr. P. H.) for graduates in medicine should normally be awarded after two years of work done under academic direction, of which one year at least should be in residence; and that the requirements for the degree should include class work, practical field work, and an essay based on individual study of a particular problem.

2. That the degree of Doctor of Philosophy or Doctor of Science in Public Health or Hygiene should be conferred upon students who hold the bachelor's degree from a college or technical school of recognized standing, and have satisfactorily completed not less than three years of graduate study. It is understood that this degree is based upon the fundamental sciences associated with hygiene and public health, including a knowledge of physics, chemistry, general biology, anatomy, physiology, physiological chemistry, pathology, and bacteriology, in addition to the thesis and other usual requirements for the Ph.D. or Sc.D. degree.

3. That the Certificate in Public Health should be granted for not less than one academic year of work to those who have received a bachelor's degree from a recognized college or technical school or have satisfactorily completed two years of work in a recognized medical school, provided they have previously pursued satisfactory courses in physics, chemistry, general biology, and general bacteriology.

4. That the degree of Bachelor of Science in Public Health or Hygiene should be given for the completion of a four years' course, the last two years of which have been devoted to the fundamental sciences associated with hygiene and public health.

5. That the authorities having the appointment of health officials be urged to give preference so far as possible to persons holding degrees or certificates in public health or hygiene.

ANTIMOSQUITO CAMPAIGNS.—A recent Public Health Report emphasizes the importance of beginning antimosquito measures as early in the spring as possible. The United States Public Health Service will gladly assist local communities in carrying out antimosquito activities, and is willing to detail experienced sanitary engineer officers to communities which may desire expert supervision of these activities. In this connection, the following summary of the results of an effective mosquito campaign carried on by the Public Health Service in the extracantonment areas last year may be instructive.

It was not possible to get rid of all *Anopheles* immediately, as camps were established in rapid succession in widely separated areas ranging from New Jersey to Texas, and Memphis, Tenn., to Jacksonville, Fla. Successful malaria control work was carried out in 43 separate areas in 15 States (in addition to the cantonment areas themselves). *Anopheles* control has been accomplished in a total area of over 1,200 square miles. Where cantonments have been located in notoriously malaria sections, very little malaria has been contracted by enlisted men, and the malaria sick rate among enlisted men in camp has been very much lower than it would have been had they stayed at home. The commanding medical officers at the cantonments report mosquitoes as being scarce at nearly all camps, and *Anopheles* seldom seen, except at two of the aviation camps near rice-field areas. When the Army and Navy sick rate figures are

published it will undoubtedly be shown that, due to proper mosquito-control measures, practically very little, and, in many instances, no malaria has been contracted at camps located in regions noted for malaria. This demonstration work, distributed over a wide area, has protected a civil population of about 1,750,000, and an average, constantly changing, military and naval population of 800,000, and should lead to a better and more extended general campaign.

Approximately half of the cantonment towns of the South have planned to continue mosquito-control measures, and there are yet others to be heard from. Among other benefits that the war has brought is a tremendous advance in general sanitation in many Southern towns and an equally important one in Anopheles and malaria control.

In certain instances where the town officials were under the impression that the expense of a mosquito drainage campaign would be beyond their financial ability, they were astounded to discover that the annual cost of screening houses and screen repairs greatly exceeded the cost of mosquito elimination. They did not realize the fact that it often costs a community, and the citizens of it personally, much more to support a mosquito nuisance than to eliminate it.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 17, 1919, the number of deaths reported was 202, against 242 last year, with a rate of 13.22 against 16.09 last year. There were 30 deaths under one year of age, against 35 last year.

The number of cases of principal reportable diseases were: Diphtheria, 31; scarlet fever, 47; measles, 18; whooping cough, 9; typhoid fever, 3; tuberculosis, 46.

Included in the above, were the following cases of non-residents: Diphtheria, 2; scarlet fever, 3; whooping cough, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 1; whooping cough, 1; tuberculosis, 29.

Included in the above, were the following non-residents: Scarlet fever, 1; tuberculosis, 3.

Influenza cases, 29; deaths, 7.

APPOINTMENTS IN STATE DEPARTMENT OF HEALTH.—1. Dr. Bernard W. Carey, epidemi-

ologist of the State Department of Health, has been appointed Director of the Division of Communicable Disease, to succeed Dr. John S. Hitchcock, who resigns May 31, 1919.

2. Dr. G. H. Bigelow of Framingham, who has returned from service in the epidemiological branch of the medical corps in France, has been appointed to succeed Dr. Bernard W. Carey, temporary epidemiologist of the State Department of Health.

HAMPSHIRE DISTRICT MEDICAL SOCIETY.—The annual meeting of the Hampshire District Medical Society was held at Forbes Library, Northampton, Massachusetts, on May 21. This meeting took the place of the regular annual meeting of June 4th. An address was delivered by Dr. Walter H. Adams, and officers were elected for the ensuing year.

SPRINGFIELD ACADEMY OF MEDICINE.—The May meeting of the Springfield Academy of Medicine was held on May 13th. An address, illustrated with lantern slides, on "Ureteral Occlusion: Its Relation to Renal Lesions," was delivered by Dr. Henry G. Bugbee of New York. The next meeting will be held on September 9th.

The officers of the Academy for 1919-1920 are: President, Dr. T. G. Alcorn; vice presidents, Dr. E. L. Davis, Dr. F. L. Everett; secretary, Dr. L. D. Chapin; treasurer, Dr. E. C. Dubois; directors, Drs. R. S. Benner, E. A. Bates, J. M. Birnie, J. B. Comins, R. B. Ober, G. L. Schadt, A. O. Squier, J. M. Tracy, H. W. Van Allen.

BEQUESTS TO HOSPITALS.—By the will of George William Thym of Brookline, provision is made for a free bed in the Massachusetts General Hospital to be known as the "George William Thym bed." The proceeds of his estate will be paid over to the Free Home for Consumptives in Boston. Other funds were bequeathed to the following institutions:

Infants' Hospital of Boston, \$10,000; Perkins School for the Blind, \$5,000; Boston Nursery for Blind Babies, \$5,000; and the Free Hospital for Women, Brookline.

TRIBUTE TO MISS DELANO.—A memorial service was held at Tremont Temple in Boston on May 15 by the New England Division of the Red Cross and the Massachusetts State Nurses' Association in honor of Miss Jane A. Delano.

who died at Base Hospital No. 69, at Savenay, France, on April 15, after serving as director general of the department of nursing of the American Red Cross. There were fifteen hundred nurses in the audience, including the nurses of the Instructive District Nursing Association and nurses from the Boston City Hospital, Camp Devens, Base Hospital No. 10, at Parker Hill, the Massachusetts General Hospital, the Homeopathic Hospital, the New England Hospital, the Marine Hospital at Chelsea, the Norfolk Hospital, and the Winchester Hospital. Many officers and privates who served overseas also attended the service. James Jackson, Reverend Sherrard Billings, Dr. Joel E. Goldthwait, and Miss Mary M. Riddell paid tribute to the life and work of Miss Delano. A posthumous award of the Distinguished Service Cross was made recently to Miss Delano and received by Dr. Livingston Farrand on behalf of the American Red Cross.

WORCESTER DISTRICT MEDICAL SOCIETY.—The annual meeting of the Worcester District Medical Society was held in Worcester on May 14, 1919. Dr. Eugene E. Kelley, Health Commissioner of Massachusetts, addressed the meeting, and Dr. Roger Kinnicutt and Dr. Benjamin H. Alton described their war experiences in France.

The following officers were elected for the ensuing year:

President, Dr. William J. Delahanty; vice president, Dr. Frederick H. Baker; treasurer, Dr. George O. Ward; and secretary, Dr. George A. Dix.

SERBIAN APPEAL FOR AID.—It has been estimated that Massachusetts will have to raise \$40,000 of the entire quota of \$250,000 needed to send hospital units, nurses, tents, ambulances, and supplies to the aid of Serbia. The government of this disease-swept country has appealed to the executive committee of American Women's Hospitals for aid. The chairman of the Massachusetts executive committee for securing sufficient funds for relief purposes is Dr. Emily Clark McLeod.

INFLUENZA IN BOSTON.—On May 14, four new cases of influenza and five of pneumonia were reported to the Boston Health Department. This rate is similar to that of the preceding twenty-four hours. On May 12, there were reported

one death from influenza and two from pneumonia.

NORFOLK DISTRICT MEDICAL SOCIETY.—At a recent meeting of the Norfolk District Medical Society, the following officers were elected for the ensuing year.

President, Dr. F. P. Denny; vice president, Dr. G. W. Winchester; secretary, Dr. Bradford Kent; treasurer, Dr. G. W. Kaan; commissioner of trials, Dr. M. V. Pierce; nominating councillors, Dr. A. N. Broughton and Dr. D. N. Blakely. The censors elected were Dr. M. J. Cronin, supervisor; Dr. W. J. Walton, Dr. B. S. Blanchard, Dr. C. F. Staek and Dr. E. T. Rollins.

COLLEGE OF PHYSICIANS AND SURGEONS.—An action has recently been brought before the legislative committee on education by Attorney-General Attwill, advocating that the power of the College of Physicians and Surgeons in Boston to grant degrees be revoked. A year ago, after the Suffolk county district attorney, the district police, and the state board of registration in medicine had investigated the matter, it is reported that Attorney-General Attwill originally advocated this action on the ground that the educational standards of this institution did not meet the requirements of other institutions authorized by the state to grant degrees. It has also been reported that thirty-seven states have refused to accept its graduates, and that many have been placed on the ineligible list for medical service in the army by the surgeon-general's department.

It is stated that the counsel for the college denied the statements that graduates were not accepted for medical service in the army and filed a list of names of graduates who were officers in the medical department of the army and navy. It was announced that four years of instruction and one year of clinical work in a hospital is the requirement to be met for obtaining a degree from this institution.

CONFERENCE OF CHILD WELFARE EXPERTS.—On May 15 and 16, a number of the leading authorities on the subject of child welfare attended a conference held at the State House in Boston. The first session was opened by Governor Coolidge with an address of welcome. Miss Julia C. Lathrop, chief of the federal children's bureau, addressed the meeting on "Working

"Children and Education." At a second session, the topic, "The Protection of the Health of Mothers and Children," was discussed; and on May 16, addresses were made on the subject, "Children in Need of Better Care."

Among the foreign delegates who attended the conference were Sir Arthur Newsholme of England, late chief medical officer of the local government board and authority on child welfare; Sir Cyril Jackson of the London board of education; R. C. Davidson, director of the Juvenile Labor Exchanges of England, leading English authority on child labor; Dr. Rene Sand, professor of social and industrial medicine at the University of Brussels, who was in charge of the Belgian war hospitals in London and at the fighting front; Mrs. Eleanor Barton of the Women's Coöperative Guild of Great Britain; Dr. Clotilde Moulon of the French war department, who supervised creches maintained by the war department in connection with munition plants; Mr. Takayuki Namaye, an official of the Japanese department of the interior charged with the enforcement of laws affecting children; Miss L. E. Carter, a Belgian, in charge of a girls' school at Brussels throughout the entire period of the war; Mr. Rene de Mot, a Belgian; Lady Newsholme of England; Prof. Fabio Frassetto, professor of anthropology at the University of Bologna; Dr. Radmila Lazarevitch Miloshevitch, a Serbian physician and a leader in social activities.

The New England Child Welfare conference is composed of one hundred and forty-two members, with Governor Coolidge as chairman. Among the members included may be mentioned Marcus H. Holcomb, Governor of Connecticut; R. Livingston Beekman, Governor of Rhode Island; John H. Bartlett, Governor of New Hampshire; Percival W. Clement, Governor of Vermont; Carl E. Milliken, Governor of Maine; Charles W. Eliot, president emeritus of Harvard University; A. Lawrence Lowell, president of Harvard University; G. Stanley Hall, president of Clark University; Prof. Irving Fisher of Yale; Andrew J. Peters, mayor of Boston; John F. Moors, Grafton D. Cushing, A. C. Ratshesky, and Mrs. J. J. Storow.

TENEMENT HOUSE SERVICE IN BOSTON.—It is probable that the housing conditions in Boston will be improved by the new plan which has been inaugurated by the Health Commissioner,

reported in the *Monthly Bulletin*. In order to make possible a more efficient and economical execution and enforcement of the housing laws of the city, the Health Department has commissioned a group of sanitary inspectors as the "housing service," under the direction of Deputy Commissioner Thomas Jordan.

Until recently, there were twenty-nine districts in the City of Boston, with a sanitary inspector in charge of each who was responsible primarily for the execution and enforcement of sanitary regulations, housing laws being of merely incidental importance. The present plan seeks, by diminishing the number of areas and assigning a definite group to be specifically responsible to the Health Department, to more effectively enforce housing regulations. This housing service will consider the location, plan, structural condition, and number of occupants of the building, from the point of view of the health of the inhabitants. It is to be hoped that objectionable housing conditions can in this way be remedied either under existing law or by enactment of such new legislation as may be deemed necessary.

GIFT OF \$100,000 TO LYNN HOSPITAL.—By the will of Walter H. Breed of Lynn, a fund of \$100,000 has been bequeathed to the Lynn Hospital.

FRANKLIN DISTRICT MEDICAL SOCIETY.—The annual meeting of the Franklin District Medical Society was held on May 13, for the election of officers and reading of reports.

CONSUMPTIVES' HOSPITAL DEPARTMENT.—The annual report of the Consumptives' Hospital Department for the year 1918 has been submitted. The number of admissions to the hospital during the year, 744, was less than in the two preceding years; it is believed, however, that this is due not to any decrease in the incidence of the disease, but rather to the fact that because of the high wages during the war, all who could work have done so. During the period when the influenza epidemic was most severe, new cases were not received. A new cottage ward of fourteen beds for women has been completed, and the day camp has been changed to a night camp. There were 9,671 patients treated by the out-patient department during the year.

For the greater part of the year, the hospital has been without a resident pathologist, because of the call of this physician to army service. For a considerable time, the work of the special chemical research laboratory was also interrupted; and clinical work has been handicapped by a depleted staff. This report contains tabulated records of admissions and discharges, condition of patients, and financial statistics.

Correspondence.

HISTORY OF A SCARLET FEVER OUTBREAK.

West Newton, Mass., May 20, 1919.

Mr. Editor:—

The following history of an outbreak of scarlet fever among school children in Newton, due to a missed case, seems to confirm Dr. Devine's contention that children are safer from infection in the school than out, and show that children very seldom contract disease in the schools, but frequently contract it from children with whom they play, out of school hours. It also illustrates a very annoying phase of the work of medical inspection of school children.

In this outbreak, six cases were traced directly to the missed case and in four others probable contact could be shown.

The secondary cases occurred as follows: Case 1, a child across the street from the infecting case, not in the same school, but a playmate out of school hours; Case 2, a child living in the next house (north); in the same school, but a different room, a playmate out of school hours—possibility of contact in the school grounds or going or coming from school; Case 3, a boy living half a mile away, not in the same school, a playmate out of school hours; Case 4, child in next house (south): same school but different room, playmate and frequenter of house out of school hours—possible contact in school grounds or to or from school; Cases 5 and 6, brother and sister of missed case, one below school age, other same school but different room. Of the other cases, three were pupils at the same school but in different rooms and the fourth was below school age. None of the cases—those in which contact could be shown and those in which it was only probable—was a pupil in the same room, and four did not attend the same school as the infecting case.

The first four cases were reported within 48 hours, and the histories pointed so clearly to the house in which the infecting case lived, that the inspector visited it and found the missed case, the other two cases in the house not developing until 24 hours later.

Other similar outbreaks of diphtheria and scarlet fever, due to missed cases, have occurred, but almost never have the secondary cases been pupils in the same schoolroom.

These missed cases are the bane of the school physician, and I know of no way to detect them if no absence has occurred.

The history often shows that the child vomited late on Friday and was slightly indisposed on Saturday, felt better on Sunday and was packed off to school on Monday morning feeling fairly normal.

In such a case, there has been no absence to draw attention to the child; he does not feel ill enough on Monday to report to the physician or nurse at the school, but he is perfectly able to infect his play-

mates and usually does so and is not discovered until several secondary cases have developed.

FRANCIS GEO. CURTIS, M.D.,

Chairman, Newton Board of Health.

INVESTIGATION OF SICKNESS EXPECTANCY.

Malden, Mass.

Mr. Editor:—

In connection with your editorial about the "Investigation of sickness expectancy," in the issue of May 8, 1919, the following lines, I think, will be of some interest.

A portion of my practice consists in attending to members of benevolent organizations and to their families. The average number of insured persons under my care since January 1st, 1919, has been about 350 to 375. The average number of families has been about 250. The average number of persons per family is about 5—a total of about 1400 persons. The patients belong largely to the class of wage-earners and are living in one of the cities adjacent to Boston, all within a radius of about three-quarters of a mile from my office.

Since January 1, 1919, I carefully recorded all the visits made at the patients' homes, which figures are brought below:

MONTH	NO. OF VISITS	AV. NO. VISITS PER DAY
January	224	7.22
February	158	5.64
March	138	4.45
April	145	4.76
Total	665	5.52

The number of office calls was not recorded, but I should judge that three per day would be a normal average.

I did not record separately the number of visits made to the heads of families, *i. e.*, to the 375 insured persons themselves.

Assuming that these individuals constituted about one fourth of the total number of persons cared for (1400), this would make about 115 home visits for a period of four months, or about one visit a day. This would make about three calls daily per thousand persons insured.

As a matter of fact, the number of calls made to these individuals was much smaller than previously indicated. In looking over my records, I could not recollect more than 75-80 calls made to these 375 insured persons during the period in question. This is consistent with the general experience every physician has. The doctor is more frequently called to the wife and to the children than to the husband and father.

I admit that the material brought here is small, and so limited that practically no conclusion can be drawn from it, which I hardly intend to do. I merely want to draw the attention to the gross and striking discrepancy between my personal experience and the figures brought in the editorial. According to my experience, 1000 comparatively normal male adults require from a physician a maximum of about 3 home visits and about 2 office calls daily, while according to the figures brought in the editorial, they should require about 20-40 professional calls daily.

Taking the figures as they are, without any comparison, they appear on face rather dubious. If 1000 male adults engaged in useful occupations require about 20-40 professional calls daily, 1000 persons among the population at large, which includes child-bearing women, children, the aged, and invalids, would at least require 30-50 professional calls daily. There is about one physician to every 750 inhabitants in the United States. Deducting the number of physicians who are not directly engaged in the prac-

tice of medicine (retired, insurance men, research workers, etc.), there is probably one active physician to every 1000 inhabitants in this country. In this way every physician in our country, which is notorious for its oversupply of medical men, has to make at least 30-50 professional calls a day in order to meet the needs of his patients.

Yours very truly,
L. SILVER, M.D.

CHEMOTHERAPEUTIC ORTHOARTERITOTONY.

Boston, May 19, 1919.

Mr. Editor:—

An article from my hand, on the dynamic factor of the Chemotherapeutic Orthoarteriotomy, printed in your issue of March 13th, has caused physicians in various parts of the country to address to me inquiries regarding the dynamic factor. For this reason, I beg leave, through your columns, to communicate the following:

Ever since the oncoming of pharmacological science in the modern sense at about the middle of the previous century, alongside with the development of this new science, *materia medica* has passed through a renaissance. Besides the descriptive requirements of an early period which a given medicinal substance must satisfy as regards its properties *in vitro*, the additional requirement of a distinctly defined action has attained a gradually ever higher development. This demand has, in a particular sense, given its character to a small number of medicinal substances which have been evolved during the last tens of years. To this evolution is attached the historical interest of the birth of "chemotherapy," a most recent development of pharmacology and therapeutics.

The conception of the medicinal substance as material mass is thereby placed in the background, and in lieu thereof the attention is concentrated upon the remedy conceived as energy of certain kind and of certain magnitude, carried by a definite amount of a certain substance which biochemically is adapted to the purpose. Thus the purpose of exactitude in internal therapeutics attains a higher degree of realization than has been possible in earlier periods of medicine.

This development has not been capable of realization without an enormous increase in the amount and the manifoldness of the work which must be done in order to actualize a new form of pharmacodynamic energy and to make it materialize through a suitable carrier-substance.

My purpose has been and continues to be to attain such completeness of knowledge regarding the pharmacodynamic action which I have proposed to name "orthoarteriotomy" and its carrier-substance, that the survival of this form of action should be assured and that it should be described in the medical literature together with the knowledge of its diagnostic and therapeutic uses.

Beyond that I can accomplish no more, pending the consensus of the medical profession at large, and I do not know at present when or where this dynamic factor, properly standardized, will be obtainable. The description in my article is sufficient as such. Meanwhile, I shall continue my researches and describe the same *sans peur et sans reproche*, without fear of anachronistic formalities, trusting this matter with unbounded confidence in the freedom of research under American institutions and American ideals.

Yours sincerely,
CLAES JULIUS ENERBUSKE, M.D.

THE COVENTRY CASE AGAIN.

Boston, May 22, 1919.

Mr. Editor:—

The heavy damages found against the British Medical Association for conspiracy, etc., proved impossible to escape, and so the appeal was abandoned. References printed in my letter Dec. 12, 1918, page 747, can now be supplemented by *British Medical Journal*, Nov. 9, 1918, p. 531 (giving a page of the decision, omitted in reading by the judge); and by *British Medical Journal Supplement*, May 3, 1919, pp. 75 and 76 (in the annual report to the British Medical Association, 1918-19). This refers to a document (containing case submitted by a Special Committee to the best procurable counsel and opinion thereon) which has not yet been received by the Boston Medical Library.

Under the head of Medical Ethics, this report says in part: "It appeared to the Committee that two alternative courses were open to the Association in view of the opinion expressed by counsel:

- (i) To lay down a line of action in any matter of policy and issue warnings to non-members, but to take no further action, or
- (ii) To keep Ethical Rules 28 and 29 in an amended form and be prepared to accept any liability arising from action taken thereunder.

The Council considers that the decision in this matter is of vital importance to the Association."

After lengthy discussions, it was last month decided to amend the Rules and take the consequences.

The "far-reaching importance" of the decision in this case has already appeared by its applicability to somewhat similar problems in the Antipodes, and by its being pertinent to the fish conspiracy cases here. Details are too voluminous to discuss.

ALFRED ELA.

SOCIETY NOTICES.

THE AMERICAN MEDICAL LIBRARY ASSOCIATION will hold its twenty-first annual meeting at Atlantic City. The sessions begin Monday, June 9, at 3 P.M., at the Hotel Marlborough-Blenheim. All interested in the subject are welcome, and the date likewise permits attendance on the A. M. A.

THE HARVARD MEDICAL ALUMNI ASSOCIATION.—The annual meeting of the Harvard Medical Alumni Association will be held in conjunction with the meeting of the Massachusetts Medical Society on Wednesday, June 4, at 2 P.M., at the Copley-Plaza Hotel.

RECENT DEATHS.

DR. K. H. v. BARDELEBEN died recently at the age of sixty-nine. Dr. Bardeleben was professor of anatomy at the University of Jena, and author of a long series of works on anatomy and evolution.

DR. R. KOBERT, professor of pharmacology, physiologic chemistry, and the history of medicine at the University of Rostock, died recently at the age of sixty-five years. Dr. Kobert was considered an authority on *materia medica* and physiologic chemistry.

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Address.

MEDICAL ASPECTS OF THE WORKMAN'S COMPENSATION LAWS.*

BY JAMES WARREN SEVER, M.D., BOSTON.

*Mr. President and Gentlemen of the Middlesex
South District Medical Society:*

It was with a feeling of great responsibility that I accepted this honor of being your duly elected orator for this occasion. When one speaks of orators one's mind unconsciously wanders back to Cicero, Demosthenes, and others of even later days. The title of orator is most awe-inspiring and the duty equally urgent. To have attempted this task, however welcome, now seems to me most presumptuous on my part and I trust that you will all bear with me, for the burden is bound to fall on each of you in turn sooner or later, and it will be my turn then to forbear.

The subject on which I wish to speak to you today is one of the greatest importance to us all as physicians. Probably not many of us have stopped to realize just what is being accomplished by the various industrial accident boards of the several states throughout the country, and that soon practically everyone engaged

in an industrial occupation of any kind will be subject to the control of these boards, if he should need compensation for an injury received. This control will not only be a medical control, not always direct but generally supervised, but the control will also be a quasi-legal one.

The importance of the physician as a factor in the administration of these Industrial Accident or Compensation Boards cannot and should not be overestimated for the following reasons: First, that in any accident the presence and report of a physician is necessary to assist in the recovery of the patient and to complete the operation of the law. In thirty-nine of the forty-two states having enacted compensation legislation it is directed that medical aid be furnished. In one state, Wyoming,¹ "there is a negative sort of notice taken inasmuch as the employee is to be denied compensation if he refuses to submit to suitable medical treatment." Second, another point is that many compensation boards now employ or designate physicians, recognized specialists in their own lines, to act as impartial examiners in disputed cases, to examine the injured workman, and to make an impartial report to the Board, and on his findings many cases are settled. In Massachusetts, according to the 5th Annual Report of the Industrial Accident Board, two hundred

*Oration delivered before the annual meeting of the Middlesex South District, Massachusetts Medical Society, April 16, 1919.

and forty cases were referred to impartial physicians for examination in regard to discontinuance of compensation. In 56% approval was granted and in 44% it was not. In the cases referred to the Supreme Court of Massachusetts by the Industrial Accident Board for decision, fifteen were decided largely on medical testimony and sixteen on points of law. Two others had to do with the legality of the collection of physicians' fees. This gives one approximately a 50% average on these decisions and again supports my statement of the importance of the physician in these affairs.

HISTORY OF THE COMPENSATION LAWS IN GENERAL.

The original compensation law is of German Socialistic origin and was adopted in 1871. It was adopted on an experimental basis and made applicable only to the more hazardous occupations because of its radical departure from hitherto legal procedures. It led later to a general compulsory accident law in 1884. Following this, other European countries adopted laws compensating workmen for injuries as follows: Austria, 1887; Hungary, 1891; Norway, 1894; Finland, 1895; France, Italy, 1898; Spain, 1900; Holland, 1901; Russia, 1904; and Belgium, Switzerland, Sweden, Denmark, Greece, Serbia, Bulgaria, Peru, and even Iceland, have adopted and are enforcing such laws.

England passed the Employer's Liability Act in 1880 and the Workman's Compensation Act in 1897. All the British colonies soon followed suit. Maryland, in 1902, was the first state in this country to pass a compensation law, which was later declared unconstitutional because it deprived parties of the right of trial by jury and conferred on an executive judicial, or at least quasi-judicial, function. It was of restricted application and included only mining, quarrying, railways, and municipal construction work. Now more than forty states, territories, and insular possessions have followed and passed such acts. These acts all vary somewhat, according to the various local ideas and conditions, but all have the basic idea of compensating the workman for an injury received as a result of and in the course of his employment, and furnishing him with some medical, surgical, or hospital treatment, not always adequate, however, for at least a ten-day or two-week period in most cases. The first compensation laws were enacted by Washington and Kansas on March 14, 1911. The first to become effective was one en-

acted by Wisconsin May 3, 1911, which took effect immediately on its passage. The first Employer's Liability law in the United States was passed by Massachusetts in 1887. This act had for its purpose the modification of the idea of negligence of a fellow servant, then operative under the common law. In 1904 an attempt was made to pass a Compensation Act in this state but it failed, and not until July 1, 1912, was a law made effective in this State. The parts of this Massachusetts law, as amended, and of interest to physicians, I will quote as follows:

Medical and Hospital Services. Section 5 (as amended by Section 1 of Chapter 708, Acts of 1914, and Chapter 198, General Acts of 1917.) During the first two weeks after the injury, and, if the employee is not immediately incapacitated thereby from earning full wages, then from the time of such incapacity, and in unusual cases, in the discretion of the board, for a longer period, the association shall furnish adequate and reasonable medical and hospital services, and medicines, when they are needed.

Right of Employee to Select Physician other than One Provided by Association. The employee shall have the right to select a physician other than the one provided by the association, and in case he shall be treated by a physician of his own selection, or whether in case of emergency or for other justifiable cause, a physician other than the one provided by the association is called in to treat the injured employee, the reasonable cost of his services shall be paid by the association, subject to the approval of the industrial accident board. Such approval shall be granted only if the board finds that the employee was so treated by such physician, or that there was such emergency or justifiable cause, and in all cases, that the services were adequate and reasonable and the charges reasonable. (In effect May 23, 1917.)

Section 8 (as amended by Section 12 of Chapter 708, Acts of 1914, and Chapter 72, General Acts of 1916). The Industrial Accident Board or any member thereof may appoint a duly qualified impartial physician to examine the injured employee and to report. The fee for this service shall be five dollars and travelling expenses, and the Board may allow additional reasonable amounts in extraordinary cases, and the association shall reimburse the board for the amount so paid. The report of the physician shall be admissible as evidence in any proceeding before the Industrial Accident Board or a committee of arbitration, provided that the employee and insurer have seasonably been furnished with copies thereof. (In effect March 23, 1916.)

Fees Subject to Approval of Board. Section 13 (as amended by Section 12 of Chapter 708, Acts of 1914, and Section 12 of Chapter 297, General Acts of 1917.) Fees of attorneys and physicians and charges of hospitals for services under this act shall be subject to the approval of the Industrial Accident Board.

Hearing by a Member if no Agreement is Reached. If the association and any physician or hospital, or the employee and any attorney, fail to reach an agreement as to the amount to be paid for such services, either party may notify the board, which may thereupon assign the case for hearing by a member of the board in accordance with the provisions of this act. The member shall report the facts to the industrial accident board for decision, and the decision shall be enforceable as provided by Part 3 of Section 11. (Approved May 24, 1917; in effect June 23, 1917.)

Workman's Compensation Laws are now enforced in different ways in different states. Twenty-four states have industrial boards or commissions, six states each have a single commissioner, and in ten states the act is administered by the courts. In Connecticut, each district has its own industrial commissioner, who is supreme in his own district. Five states have a monopolistic state insurance fund from which the compensation is paid. In the other states there are different methods of insurance, competitive in character, which furnish the means of compensation and which are broadly divided as follows into four groups:

1. State monopoly.
2. Competitive state fund.
3. Private insurance—either stock or mutual.
4. Self-insurance, or where employers are permitted to carry their own risks.

In the states having the monopolistic state insurance, that is the only form permitted. There are various laws throughout the states, differing a great deal in character and method of procedure and means of procuring insurance, but the four ways outlined above will give one a good working knowledge of the general scheme.

In thirty-five states only is insurance obligatory or compulsory under one of the four methods previously outlined. In the other states the act is elective, but if the employer does not accept the act, he loses his several common law defenses and is so penalized. Three states now have the so-called state mutual insurance companies, of which Massachusetts was

the first. The original purpose of this type of insurance was to create an insurance monopoly conducted by an Employer's Mutual Company and supervised by the State. Before the law was enacted in this State, however, private companies were given practically the same privileges as the so-called State company. In Massachusetts carrying so-called self-insurance is not permitted.

Under these various laws administered by the courts, the State Funds, and the Industrial Commissions, there is a distinct difference in the status of the medical adviser. In the states where the act is administered by the courts, the medical testimony is determined by expert medical witnesses, with all the usual faults that we all know go with this method. In the states which have a monopolistic insurance fund, the medical testimony and report of the accident is submitted to the board, with the bills for attendance, and the compensation is paid by the State. In the other states where the compensation is paid direct by the insurance companies, duplicate receipts are sent to the industrial boards. Disputed medical questions are determined in these states generally by an examination by an impartial physician appointed by the board, whose testimony goes a long way towards determining the necessity for the continuation of or the cessation of the compensation payments. This impartial examination is paid for by the insurance company through the state treasurer. In some states this work of impartial examination is carried out by the State through a physician who holds the post of medical director of a state medical department, created by the board for its own use.

Medical Service. In regard to medical service under the various state acts, most of the different legislatures and compensation boards have at last recognized the fact that adequate medical and hospital treatment is absolutely essential for the economic rehabilitation of the injured workman. There is also a close state supervision of the type of service rendered, as I have before mentioned, but only in some states. Massachusetts, Rhode Island, and Washington give the employee the right to select his own physician. This factor alone, while seemingly constitutionally right, will tend in the end to be a boomerang unless the medical profession awakes in time and gives these in-

jured people adequate and proper treatment. Insurance companies are not in business for pleasure or on a charity basis. They are primarily to make money and pay dividends. When they see the cost of medical benefits varying from 10% to 30% of the total cost of compensation, with the various restrictions as to medical services as applied in the different states, as well as the equally marked variation in medical results, they are not going to stand idle long, and be content to pay out these large sums without adequate results.

I have received on rather good authority the statement that the total cost per capita of compensation in this state, by practically all the private insurance companies, amounts to \$1.40 as against \$1.00 taken in, leaving a deficit, as you see, of 40 cents per case. The insurance companies cannot stand this sort of thing, and will either have to raise their rates, provide a better checking up system of their cases from a medical point of view, or else get out of the compensation business altogether. I believe that this per capita cost can be reduced considerably by having an adequate medical follow-up system, and it certainly will be worth their while to try it.

When you stop to think that in Massachusetts alone, industrial accidents have risen in number from 90,631 in 1912-1913, to 174,372 in 1916-1917, covering about 88.8% of the employees of the State, you can see what a problem you have before you. If you will forgive me for quoting statistics, I shall endeavor to give you an idea of just what these figures mean, first from the point of view of disability and then from the standpoint of medical payments.

In the great majority of the cases, 96,054*, the duration of total disability did not extend beyond the day on which the injury occurred. This figure represents 55.1 per cent. of the total cases reported.

In 11,697 cases, or 6.7 per cent., total disability extended from one to three days.

In 19,421, or 11.1 per cent., total disability extended from four to seven days.

In 6,885 cases, or 4 per cent., total disability extended from eight to ten days.

In 7,341 cases, or 4.2 per cent., total disability extended from eleven to fourteen days.

That is, 45,344 lasted only the two weeks,

for which they are entitled to the medical benefits.

In 14,166 cases, or 8.1 per cent., incapacity extended from fifteen to twenty-eight days.

In 11,167 cases, or 6.4 per cent., incapacity extended from twenty-nine to fifty-six days.

In 4,118 cases, or 2.4 per cent., incapacity extended from fifty-seven to ninety-one days.

In 2,194 cases, or 1.3 per cent., incapacity extended from ninety-two to one hundred and eighty-two days.

In 744 cases, or .4 per cent., incapacity extended from one hundred and eighty-three to three hundred and fifty-seven days.

In 576 cases, or .3 per cent., incapacity extended beyond this period, or over a year.

The following facts in regard to the medical benefits under the Massachusetts Workman's Compensation Act are presented for your consideration:

The first table (Table I) shows medical payments made on the injuries that occurred each year, the number of medical benefit cases, and the average cost per case. These figures cover treatment cost only. There may be some additional contract cost, cost of plant hospitals run by employers, etc.,—the expense cost per case, you should note, is a simple average based on the cases shown and is undoubtedly depressed considerably by the volume of treatment in cases which require only a small amount of attention.

TABLE I.—MEDICAL PAYMENTS UNDER THE COMPENSATION ACT, JULY 1, 1912-JUNE 30, 1918.

YEAR	PAYMENTS	NO. OF MEDICAL BENEFIT CASES	NO. OF AGED REPORT RECEIVED	AVE. COST PER MEDICAL BENEFIT CASE
1912-1913	\$414,195.42	37,523	90,631	\$11.04
1913-1914	556,250.45	56,827	98,729	9.79
1914-1915	587,769.99	62,814	95,769	9.36
1915-1916	834,804.52	89,598	137,695	9.32
1916-1917	1,053,303.72	104,357	174,372	10.09
1917-1918	1,019,518.84	86,387	.....	11.80
Totals	\$4,465,842.94	437,506		\$10.20

In the six-year period for which figures are here shown, there was paid on account of all benefits under the Workman's Compensation Act, \$20,252,915.81; as shown by the preceding table for the same period, there was paid on account of medical benefits, \$4,465,842.94. Thus, medical payments in this period represented 22% of the total compensation benefits.

Medical attendance was given on more than 50% of the total accidents in Massachusetts.

MEDICAL PAYMENTS

Increase in 2nd year over 1st year	34.3%
Increase in 3d year over 2nd year	5.7%
Increase in 4th year over 3rd year	42.0%
Increase in 5th year over 4th year	26.2%

July 1, 1916 to June 30, 1917

Number of employees received medical services only	76,904
Number of employees received both medical services and compensation	27,453

You must remember that in Massachusetts the compensation period begins at the eleventh day, instead of at the 14th, as formerly, thus giving the injured workman a shorter wait for his money than he formerly had.

In all cases of injury which require medical attention, proper and reasonable medical bills are paid for a period of two weeks from the date of injury, or if the employee is not immediately incapacitated by the injury, then for a period of two weeks from the time when incapacity began. In unusual cases, so decided by the board, the medical fees may be continued to be paid by the insurer, provided the board agrees.

In 1917, in the United States, there were 300,000 men disabled and 3,000,000 minor accidents in industry. "Taking the State of Pennsylvania as an example of a state having a large body of industrial workers and many accidents, it will be of interest to make some comparison between industrial accidents and war casualties. The population of Pennsylvania is approximately the same as Canada, 8,000,000, and if Pennsylvania raised an army approximately the same size as Canada raised, 400,000 to 500,000 men, which it was expected Pennsylvania would do, the army of employees remaining in Pennsylvania would be six times as great as the army sent to war. The number of industrial workers injured in two and one-half years in Pennsylvania is greater than the army that either Canada or Pennsylvania is sending to war against Germany. There were, on an average, 3,000,000 Pennsylvania workers at work continuously during the two and one-half years from January, 1916 to July, 1918, and the injuries amounted to 577,053 in that time. In other words, if the number of Pennsylvanians injured in the war equals in two and one-half years the number injured in the industries of Pennsylvania during the same

period, every man in an army of 500,000 will be injured once, and more than 75,000 in that army will be twice wounded during these two and one-half years.

Question of Medical Benefits. Compensation boards in general are beginning to recognize the fact that adequate surgical or hospital treatment is essential in restoring the injured workman to his position. Six states, enacting these law in 1917-1918, all provided medical and surgical aid at the expense of the employer, while of five older laws which had omitted such provisions, two were amended in 1917 so as to grant assistance of this nature. There are still three states which provide no medical treatment in these cases, namely, Alaska, Arizona, and Wyoming. It is to be presumed that these will soon come into line with adequate amendments of their laws.

"In three states the provision for medical aid is limited only by the necessities of the case or the discretion of the Administrative Board. These are California, Connecticut, and Idaho. Medical aid varies from a definite time limit of two weeks in nine states to ninety days in four, or there is a limitation on the amount that is required to be expended, ranging from \$150 to \$250, or again, both restrictions may be employed. Two of the states, which have a two weeks' limitation, also restrict the employers' liability for medical expense to \$25."

These last low limits furnish a certain amount of financial and medical relief in minor injury cases, but take into no account the cases whose disability extends over a longer period, who constitute about 35% to 40% of the industrial accidents. Does this seem reasonable or fair, either for the injured workman or the doctor who has to treat him?

In Argentine, the law there states that the employer furnish medical and pharmaceutical aid until the occurrence of one of the following events:

- The death of the injured man.
- The restoration of conditions enabling him to return to work.
- The determination of permanent incapacity.

I know of no law which goes so far as this in the United States.

"No state, with the single exception of Massachusetts, looks beyond the healing of the

wound, with perhaps some supply of artificial limbs, and compensation more or less adequate for the resultant disability, the matter of rehabilitation being as yet generally unprovided for."

Selection of Physician. This right is now in the hands of the employee in Massachusetts, Rhode Island, and Washington, at the expense of the employer. In three other states, Connecticut, Idaho, and Illinois, the employee has the right to furnish his own medical service at his own expense. Sixteen states provide that in the case of the employer's neglect, inability, or refusal to furnish adequate treatment, the employee may provide it at the expense of the employer. In three states, the board is authorized to order a change of physicians if it finds such action necessary, while in California, the employer must change physicians if requested by the employee, but only to such as are vouched for by the Board, and shall nominate at least three additional physicians competent to treat his particular case, from whom the employer may choose. I understand that also in California there is in vogue an adequate medical supervision by the State of the treatment rendered the patient and that unless the treatment is adequate and properly carried out by competent men, the State steps in and orders a change of physicians. This may seem a bit arbitrary, but who can deny its justice and propriety? The arrangement there has not raised the average per capita cost of medical treatments greatly, as in the year 1916-1917 it was \$11.69, including all cases, fatal, permanent, or temporary, which contrasted with the average compensation paid each case of \$16.52 does not seem large.

California has brought to the front the question of having poorly equipped medical men accept the treatment of industrial accidents, and feels that only the best equipped men, who can and do give the best medical service, should treat these cases. It is obvious that service of this latter type would reduce to its minimum the untoward results and long-continued periods of compensation. In regard to contract practice on the part of insurance companies, they feel, and I am sure everyone who has thought much about contract practice in general feels the same way, that the results are not apt to be good. Many poorly

equipped men are acquired for comparatively little financial remuneration, and consequently the product is bad. There is no definite checking up of results and no real personal responsibility, and the result is inevitably poor.

Osteopathy, chiropractics, neuropaths, and various other "paths," are engaged in this type of work, even in Massachusetts, under the apparent cognizance and pay of the insurance companies. Several of these instances are known to me and so far the results are about as one would expect from the type of service rendered. It does not help a crush fracture of the spine to manipulate it three or four times a week and leave the fracture unsupported, neither does it help the insurance companies. They seem to think that medical men are all cut from the same piece, and apparently are quite as willing to class the various "paths" with the better-trained and educated physicians. The medical profession has really only itself to blame for this situation. They can give pills and liniments, but when the mechanical treatment begins, they are at a loss which way to turn, and as a result often do nothing, or at best, talk osteopathy, which is fatal. The time is coming when either the State or insurance companies, or both, will select the medical men best qualified to treat these industrial accidents, and when that time comes, the patient will lose through legislative amendment, the right to choose his own physician.

The right to choose one's own physician is really the decision on the part of the injured workman to treat his own case, as he sees fit. If he goes to one doctor and asks for treatment, which is outlined to him, he can accept it or not as he pleases. If he does not like it, especially if it implies a splint, crutches, cast or what-not, he goes to another and another until he gets what he wants and is willing perhaps to carry out. This may seem to be an exaggeration, but is literally true. Under the plan where the physician is supplied by the insurer, he has an acceptable, somewhat standardized treatment by qualified men, and if he does not choose to accept it, he is likely to have to pay for his own medical advice, as well as to lose his compensation. From the point of view of the injured workman, this latter plan is really the only sensible method of procedure. From

the point of view of the medical fraternity, they lose their patients and a means of livelihood. What is to be the final stand?

To go a little further in this argument, I will discuss the problem first from the point of view of selection of the physician by the employer, and secondly, the selection of the physician by the employee.

Selection by the Employer. First, the burden of paying the medical costs generally falls on the insurance company, and through it on the employer, and on the public through the cost of the goods manufactured. Therefore, it seems only reasonable and just that he should have a voice in and a choice of the selection of the physician to treat the injured workman. As I have before stated, it is only by adequate medical services, and I mean that in its fullest sense, that these compensation costs can be reduced, for these costs depend wholly on, not only the number of accidents in his plant, but the total weekly compensation benefits paid. Good medical treatment, however, is, as you have seen by previous statements in regard to the regulations imposed by the various state laws, not always in the control of the employer, who is generally better able to judge of a medical man's ability than the workman himself. Workmen often turn to their family physician who may or may not be able and competent to treat their injury, and there is always, especially in the more serious cases, the reasonable question if he is so competent. Again, it is not an unknown condition and practice for certain physicians to string out the treatment, make many uncalled for and frequent visits, and pad their bills accordingly, for the first two weeks. It is not a rare occurrence for the board to find that an injured workman received as many as three visits a day for the first two weeks, with frequent change of prescriptions, the medicines supplied by the physician himself, but upon the arrival of the fifteenth day, all need for such careful attention immediately ceased, and no more visits were made. There is a reason, and happily this practice is being stamped out by the rule in Section 13 of the Act above quoted, that all physicians' bills shall be approved by the Board. The Board knows pretty well by now the men who have done this sort of thing, and it can be safely predicted that they can no longer do it and get away with it. Cases

which should have expert hospital care are often cared for at home during the first two weeks and then unloaded on the hospitals, too late often for good results. All these above mentioned facts have led and are leading large manufacturing interests and insurance companies to insist on their legal rights to select their own physician for the treatment of these cases, and many of them have established hospitals in connection with their plants, for it is maintained that better medical service can be so furnished with better results at less cost. They should be in a position to judge, and surely they are not doing it on a philanthropic basis. Early attention to minor injuries, which they require reported at once, often cuts down the danger of sepsis and leads to an early recovery. If not reported, and a septic hand resulted from an injury and the man went, after a few days, to his own physician, the result might be long deferred, due to lack of immediate aid and treatment, the compensation cost and medical cost increased, and probably the ultimate earning capacity of the man reduced on account of a partially disabled hand. Do you wonder they want to control the medical treatment? And, on the whole, apart from the physician's point of view, is it not better for the man who is injured?

Finally, in cases where employees are attended by their own physicians, the employer should have the legal right to make periodic examination of the injured party to check up the treatment and results. This is fair, legally equitable and just, and should cause no obvious objection if everything is as it should be.

Selection by the Employee. We now turn to the second point of view, namely, the choice of the physician by the employee. There is and has been a reaction against the system by which the employer furnishes the medical treatment, and three reasons are generally advanced in favor of free choice on the part of the employee. In the first place, as I have mentioned before, it is nearly a constitutional right for an individual to have the right to choose his own physician. He prefers a man to treat him whom he knows and in whom he has confidence, and with whom he can discuss his case without the fear that he is telling something he should not to an agent of an insurance company, and which later may be used against him. Again, the employee has to accept treat-

ment from men either doing the work on a contract basis, or in plant hospitals, generally under young and inexperienced men. There are a number of exceptions, of course, to this statement, but in the main it holds true. The contract work is attended with all the evils usually associated with that type of work, namely, incompetence, lack of time on the part of the physician on account of having too much to do, and consequently, inadequate treatment. There is another factor of great importance in connection with contract and plant hospital treatment, which is the question of disability. There is often a wide variance between the opinions of the family physician and the medical man from the company, as to the injured man's ability to go to work, and as to the degree and duration of his disability.

Naturally the contract surgeon wants to make as good a showing as possible in regard to his results and is again often unconsciously forced, perhaps, by his employer to state that men are able to go back to work and are no longer disabled, when, under other circumstances he would probably not do so. Naturally the workmen are aware of this condition and prefer to be cared for by someone who will not try to make them work when they are really not able to do so.

Now, the third factor, in the idea that the employee should be able to choose his own physician, is the question of medical fees. Here we are treading on delicate and much harrowed ground which is still being turned. Before the enactment of any of these compensation laws, there was no distinction as regards the method by which a man was hurt, either by accident arising out of or in the course of his employment. He chose his own physician, was treated by him, and paid him, if possible. Generally the medical man was not paid. If the case went to a hospital, the loss was on the institution, and the physician there did the work necessary without pay, as a part of his usual routine. The enactment of the compensation laws, however, made the employer liable for adequate medical and hospital services, for a while at least, but the laws made and have made no provision as to fees. They state only that they should be reasonable. In thirteen states they state they should be limited to such charges as prevail in the same community for similar treatment of injured

persons of a like standard of living. Once the employer became liable for the financial end of the case, the physicians maintained that these cases being no longer on a charity basis, they should pay regular fees, medical and hospital, for services rendered. They also objected, and reasonably I believe, to adopting a sliding scale for these cases, when they knew that the factories where these men were injured were not operating on any such basis, nor were the insurance companies in business for their health or charity.

At first, under the law, when the physicians' bills were submitted many disputes arose, and still arise, but the general tendency now is to make the best of things and to work the whole thing out on the basis of a compromise—only, bear this in mind, it is the physician who does the work, has the worry, trouble, expense, and responsibility, and who also compromises,—not the insurance companies. To be sure, perhaps we get paid in part now for what we do, when before we got nothing. That does not make the matter any more equitable, however. In regard to this point, the English experience, as a result of the enactment of compulsory insurance against illness of workman, in 1911, may be noted. The passage of this Act was, as you may remember, followed by a veritable strike of the British Medical Association. In spite of that, the law was enforced, differences were adjusted and compromised, and the loss of income, feared by the British physician, did not materialize. Under the operation of the law, the incomes of a great body of the medical men of great Britain have increased and better services have been rendered the workingman. If that is the result there, it will probably be the result here under this fee regulation régime in accident work, and will probably hold true in health or sickness insurance, when it comes, as it is bound to, sooner or later.

The compensation boards try to settle claims on physicians' bills as well as they can, and their word is generally final with both the insurance companies and the physicians.

As a result of all this discussion on medical fees, employers and insurance companies are beginning to employ surgeons, establish hospitals, and engage nurses to make home to home visits on the injured man. This all because a number of men have refused to treat

industrial accidents unless paid their regular fees. This idea broadly carried out will eventually lead to the elimination of the general medical man from seeing or treating such accidents, and there will be established industrial hospitals and industrial surgeons, who are a goodly number now, and who will increase in number without fail. Many men, I believe, have definitely come into the army medical corps, in the orthopedic section, with the idea that when they are discharged, they will be better equipped than ever, because of their army orthopedic training, to do such industrial work. A number of these men were doing this type of work before, but have wished to broaden their horizon. The field looms large, and it looks bad for the inalienable rights of men and their own physicians. War has brought about many new things, among which is the reborn and revived idea of reconstruction and rehabilitation. This can be accomplished only in hospitals or definitely established centers, properly equipped with apparatus and personnel. The idea of treating a man for two weeks after a severe and disabling accident belongs to a past geologic age, and now the individual must be made fit to go back to work of some kind, if not to his old job, then some other, and his medical expenses during this period should be covered, and eventually in all cases will be. At present it is hard for the insurance companies to grasp the idea that adequate medical attention is necessary, and that any kind of non-supervised treatment will not do. They apparently had much rather go on paying weekly compensations indefinitely than to get into something they know not of. For one, I can assure them that they will save money in the end, get better results, and pay less weekly compensation benefits, also pay larger medical bills, but get larger dividends, financial as well as moral, if they will adopt this course. It is bound, like woman's suffrage, to come, and they might just as well accept it now and say they thought of it first, as to have to swallow it later. After they have had it for a while you could never get them to give it up, on a financial basis, at any rate. Massachusetts, to her credit last year, established a vocational department for the rehabilitation and reeducation of injured workmen. As far as I am aware, this is the only state which has so far done so.

I have been wandering a bit and will now get back to my subject of medical fees. As a solution of the fee problem, it has been suggested that the injured man be allowed to select the physician, but that his choice be limited only to those who are competent and experienced in industrial surgery, which is really a field by itself, but closely allied to orthopedics. This plan at once raises the question as to who is qualified, and who is to determine who is so qualified? Selection of these men might be determined by the Legislature and Compensation Boards, acting upon and with the advice of the State Medical Society, like the Massachusetts Medical Society, through a committee appointed by the Society for that purpose. In some states, I believe, this practice is carried out to a modified extent, but only from physicians nominated by the insurance companies or employer. This would give free choice, but not the individual choice always desired.

The laws of several states provide a medical adviser, Massachusetts being one of them, to advise the boards in regard to medical decisions. Some states have also provided medical committees, composed of representatives from the medical societies and insurance companies, to study and report on the fee question. In Massachusetts we have a medical advisory committee appointed by the Governor to which certain definite medical and fee questions are submitted by the industrial accident board for advice.

They have no real power. They act only in an advisory way. This committee, however, has been of great use and value and I will quote from a report made by them on the question of medical fees under the Compensation Act, to refresh your memory as to what the situation is in this Commonwealth. They say: "There has been a tendency on the part of some physicians, not many of them members of our societies, but still physicians ostensibly respectable, to pad bills and raise their rates; in other words, to treat this law as an opportunity for medical graft. In many of these matters the medical advisory board has been able to help the Industrial Accident Board towards a solution. . . . The board reached, before we came into this matter at all, a sort of working agreement with the insurance men that the company should pay reasonable

charges for work actually rendered. . . . It has been necessary, to keep peace under this agreement, to adopt an "industrial rate," as to bills, not a fixed rate, but an understanding that services paid for under this act shall be at a rate not less than the average minimum rate in the localities where such services were rendered." "It seems to us that the whole intent of the law is not charity, but rather to lift the injured workman out of the pauper class and, at least for the fortnight following the injury, to furnish him with the best care, to give him the best possible chance for complete and early recovery and return to working power. Some of the insurance men regard the whole matter, seemingly, as a partially charitable service, and argue that cut rates and charity were granted the sufferers by doctors and hospitals before this Act went into effect, therefore this sort of thing should continue. This committee believe that the law has worked out well so far, for a new law, and that on the whole, the medical profession has lost nothing by it."

¹⁰The State of Washington in 1917 tried a notable medical administrative experiment. "This State, which had previously not required employers to furnish any medical aid whatever, amended its law so as to provide for practically unlimited medical and hospital service." The law then provides for a State Medical Board, composed of the medical advisor of the Industrial Insurance Department, and one representative each of the employers and employees. The Board is also authorized to promulgate rules, issue a maximum fee table, approve physicians' and hospitals' bills. The administration of this work was carried out by the organization of these local medical boards, who had to provide care and treatment for the injured workman, report the beginning and termination of the disability, cause of injury, and certify medical bills.

In order to organize properly, the State was divided into districts, where a physician doing industrial work lived. This scheme has not worked very well, however, for the employer was too busy to serve on the board, the workman representative was making more than the three dollars a day allowed for such service and did not want to give up a larger wage for a smaller, and inasmuch as the injured workman was allowed free choice of physician, the

accidents were not always reported, and the local board was not aware of them until the physician's bill was presented on certification. Steps have been taken to work out the various details, and the plan may work well eventually.

Hospital Fees. In this connection it should be stated that the board allows hospitals to charge only \$15 a week for the care of a patient who is receiving compensation. In a recent decision they allowed the Massachusetts General Hospital \$17.50 a week, when they were shown that it was not a discriminatory rate, but was the standard rate charged by the hospital to all patients able to pay. If one—why not another? Few, if any, hospitals today can lodge and board a patient, much less take medical and surgical care of him, for \$15 a week. Most hospitals find that they are losing money even at \$18 to \$22 a week. Why should not the board recognize this fact and allow the hospitals to receive this non-discriminatory rate for their industrial cases, as they do for their other cases? To my mind it certainly puts the insurance companies on the defense as recipients of charity to which they are not entitled and should not be allowed to receive. They should, to my mind, pay cost, and the board should see to it that they should do so. I understand that in Philadelphia some, if not all, of the hospitals have joined in refusing to accept the industrial accident cases, except as emergencies, unless a flat rate of \$20 a week is paid to cover cost.

Another much disputed point is the advisability of allowing physicians connected with hospitals to charge fees for industrial accident cases which come under their care in that particular hospital. The ruling of the board is that they should not do so. If they took care of them outside of the hospital they would be entitled to a fee, but on the inside of the hospital they are not. The board feels, I believe, that a physician on the staff of a hospital is in a peculiar and favored position, and that to allow him to charge for his services in these cases would be discriminatory and unfair to the rest of the medical profession in that they did not have the same opportunities. This may seem off hand a reasonable attitude, but to my mind is no defense for the board or insurance companies in asking the physicians connected with hospitals, who have enough to do anyway,

to take care of the cases, who should pay for their medical services as the law requires, for nothing. This attitude will inevitably prevent the hospitals in general from accepting these cases for treatment unless they pay full rates as private patients, or they will open wards for these cases, to be treated at ward rates as private cases, the wards to be private ones, and for whose treatment the physician in charge may then properly collect a fee.

Gentlemen, you have now had put before you a general statement of the medical aspects of the various compensation laws of the several states of our Union. I have neglected to state that there is also a Federal Compensation law which covers railroad employees and those engaged in interstate commerce. We have been fortunate in our state in our industrial accident board and in its administration of the workman's compensation law. It has certainly tried to play fair, to one and all, the insurance companies, the workman, and the physician. Its lot has not been an easy one. We have also been fortunate in having as a medical adviser to our board a skillful organizer, and a man whose ability has certainly found a welcome outlet in the development of the medical work of the Compensation Law in this State. I firmly believe that he has had a most difficult and arduous job, which was started with no guide posts and has been developed along broad and constructive lines. The work of our medical adviser has been followed and copied in many respects by other states, as has also certain other aspects of our compensation laws, for the mutual benefit of all concerned.

It is fitting in closing that I should quote the following sentence from Dr. Francis Donoghue's paper in regard to medical fees, and the question of the establishment of fee tables. He states that, "Fee tables are simply makeshifts. The great principle underlying all compensation is adequate treatment from start to finish, and the measure of medical services should not be the measure of medical costs, but the measure of medical results."

That is most excellent advice, Gentlemen, and until we can show better results, and more adequate care in these cases, let us be careful about asking for larger fees.

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Original Articles.

THE PHYSICAL CONDITION OF NEW ENGLAND MEN BETWEEN THE AGES OF 21 AND 31 YEARS OF AGE AS SHOWN BY THE EXAMINATIONS MADE FOR THE ARMY UNDER THE SELECTIVE SERVICE LAW DURING THE YEARS 1917 AND 1918.

BY ISAAC W. BREWER, M.D., WATERTOWN, N. Y.

City Health Officer.

THE physical examinations made under the selective service law by the local boards and the surgeons at the mobilization camps are a cross section of the physical condition of the whole population of the country between the ages of 21 and 31 years of age. When they shall have been tabulated and studied they will form a reliable basis upon which to build plans for better health throughout the country. Until the reports shall be so published we will have to be content with the summaries found in the two annual reports of the Provost Marshal General.

From his first report, which covers the period from June 5th to December 15th, 1917, we find that 2,510,706 were examined and that 29.11% were rejected as unfit for military duty. At the mobilization camp an additional 4% were rejected, making a total of 33.1% unfit for service. In addition 2% must be added for men who had venereal disease when they arrived at the camp.

In Table 1 are shown the percentages of men rejected in the several New England States to include December 15, 1917.

TABLE 1.—PERCENTAGE OF MEN REJECTED BY THE LOCAL DRAFT BOARDS IN THE SEVERAL NEW ENGLAND STATES TO INCLUDE DEC. 15, 1918.

STATE	PERCENTAGE REJECTED
Connecticut	45.30
Vermont	43.82
Maine	42.57
New Hampshire	38.70
Massachusetts	35.48
Rhode Island	32.73
Average for the United States	29.11

From this it is seen that the percentage of rejections does not depend entirely on density of population, for while Connecticut is largely a manufacturing state and the population is fairly dense, Vermont and Maine, occupying second and third place, are classed as rural communities. Possibly the character of the work done has much to do with the physical condition of the population, but we are inclined to believe that effectiveness of the health administration is a large factor, which is shown by the comparatively low rate in Massachusetts, which is not only fairly densely populated but also a manufacturing state.

Why the New England States should have a rate higher than the average in the United States, remains for future study to determine.

Early in 1918 the Provost Marshal General directed that the local boards classify the men called for examination according to their fitness for military duty. Class "A" was to contain those men who were fit for all military duty; Class "B," those men with defects that could have been remedied by treatment or operation; a large number of these men had hernia; Class "C." In this class were placed men who were unfit for full military duty, and whose defects could not have been bettered by treatment. In this group were found many defects from poor vision to wooden legs, and observation of some 2,000 such men sent to Camp A. A. Humphreys showed that many of them were unfit for

limited service. In Class "D" were placed men who were totally unfit for service.

The data for New England is shown in Table 2.

TABLE 2.—CLASSIFICATION OF THE NEW ENGLAND DRAFTES FROM DEC. 15, 1917, TO SEPT. 11, 1918.

	TABLE 2.					
	CONN.	MASS.	MAINE	N. H.	R. I.	VT.
Total examined	38,631	108,356	22,646	12,258	15,398	10,761
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Class "A"	58.8	57.4	65.2	63.6	53.7	56.3
Class "B"	4.4	3.5	2.7	2.0	3.7	3.4
Class "C"	16.0	20.5	14.9	20.8	13.9	17.8
Class "D"	20.8	18.6	17.2	13.6	28.7	22.5

This 1918 classification rather changes the percentages of rejections and the order of the New England States. The point is that both tables show a large number of men physically unfit for military duty. Possibly many of them were earning a living before the draft and will continue to do so, but that does not alter the case. We are not endeavoring to make what we can out of a bad thing but to have strong citizens who can follow the occupation that most pleases them without physical handicap.

From the point of view of the prevention of disease the cause of rejection is of the greatest importance. For New England these data are presented in Table 3. In reading this table it is to be remembered that only the causes of rejection are given: for instance, enlarged ton-

TABLE 3.—CAUSE OF PHYSICAL REJECTION IN NEW ENGLAND. COMBINED PERCENTAGE OF LOCAL BOARDS, EXAMINERS AT CAMPS, AND DISCHARGES FOR DISABILITY OF MEN RECENTLY INDUCTED FEB. 10 TO NOV. 1, 1918.

	U. S.	CONN.	MAINE	MASS.	N. H.	R. I.	VT.
Total rejected	467,694	9,427	1,911	22,425	1,384	2,853	966
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Alcohol and drugs	0.4	0.3	0.3	0.5	0.1	0.9	0.1
Bones and joints	12.3	9.1	10.3	8.8	10.0	7.5	11.0
Developmental defects	8.4	9.6	9.2	13.7	11.9	15.2	3.7
Diseases of digestive system	0.5	0.5	0.5	0.5	0.4	0.4	0.5
Diseases of the ears	4.4	6.9	3.5	5.8	5.6	5.6	2.4
Diseases of the eyes	10.6	17.1	5.1	14.0	11.8	13.4	11.3
Flat-foot (pathological)	3.8	2.4	13.1	3.3	5.8	5.8	8.3
Genito-urinary (venereal)	1.3	0.4	1.3	0.4	0.5	0.4	1.0
" (non-venereal)	1.3	1.5	2.2	1.3	2.3	0.7	3.4
Heart and blood vessels	13.1	14.8	14.1	14.9	12.7	10.0	11.0
Hernia	6.0	3.1	8.3	3.6	4.9	5.4	8.5
Mental deficiency	5.2	4.4	7.2	3.7	4.3	3.5	3.3
Nervous and mental disorders	2.5	5.4	4.9	4.0	5.5	4.2	8.6
Respiratory tuberculosis	8.7	10.1	3.6	7.8	7.3	7.9	2.1
Respiratory, non-tubercular	1.7	1.9	2.5	1.6	2.0	1.5	3.3
Diseases of the skin	2.7	3.2	1.3	3.2	0.5	1.9	2.6
Teeth	3.1	1.6	5.5	4.2	5.5	4.9	5.8
Diseases of thyroid	1.8	0.8	0.4	0.3	0.3	0.5	1.9
Tuberculosis, non-tubercular	0.9	1.5	0.1	1.0	1.7	0.9	—
All other defects	3.1	3.0	1.0	4.4	2.2	3.0	3.3
Cause not given	5.4	2.4	5.8	3.0	4.6	5.2	8.1

sils was a very common occurrence, but as it was not a cause for rejection it does not appear in the table. Venereal disease was not a cause for rejection except in rare cases, so that the number is probably in excess of what is shown in the table.

Diseases of the bones and joints are apparently not so serious as in other portions of the country. Excepting in Vermont development defects are above the average. Defects of the eyes are also above the average excepting in Maine. The standard of vision adopted by the army was rather low. A man with 20/70 vision in one eye would be passed provided he had 20/30 in the other eye, after correction by lenses. The large number of men with serious flat foot in Maine is worthy of some study by those having charge of the medical inspection in the schools. It is rather disquieting to find so many young men with organic heart lesions. The large number of men disqualified because of mental and nervous disorders and mental deficiency should at once attract the attention of the law makers as well as the physicians and social workers. The number rejected because of pulmonary tuberculosis does not mean that that number are new cases but rather that many men who were known to have the disease were called for examination. However, many new cases were found by the local boards and at the camps. Their discovery indicates the great need of periodical physical examinations. The same applies to diseases of the heart.

The question of comparative health of the city boy and the country boy is partly answered by the following, based upon a study of 200,000 men equally divided between rural and urban communities. (The Provost Marshal General defines a rural district as one which has less than 1200 registrants on June 5, 1917.) Subject to this definition he finds that 21.68% of the city men were rejected, while in the rural districts the percentage was 16.89%.

It is regretted that the data given in the reports of the Provost Marshal General do not give the rejections by ages. However, we find a valuable side light upon the effect of age in the following table, which classifies the men of the first draft who were from 21 to 31 years of age, according to their fitness for military duty, and compares them with a similar classification of men who registered when they became 21 years of age.

TABLE 4.

	AGE 21 TO 31 YEARS	AGE 21 YEAR-
Total examined	2,693,448	514,998
	Per Cent.	Per Cent.
Class A...	69.17	76.89
Class B...	2.79	2.59
Disqualified { Class C...	10.57	10.59
{ Class D...	17.47	9.83

The above table shows a loss in military efficiency of 7.72 in a period of eleven years, and is probably a minimum, as many of the men examined in the first draft were just 21.

Of the venereal diseases we have some very definite information in the annual report of the Surgeon General of the Army for the year 1918, containing data for the year 1917, which is shown in the following table.

TABLE 5.—PERCENTAGE OF MEN REJECTED AT MOBILIZATION CAMPS.

STATE	GONORRHEA	SYPHILIS	CHANCROID	TOTAL
Maine	1.29	0.48	0.03	1.79
New Hampshire ..	0.13	0.13	—	0.26
Vermont	1.35	0.14	—	1.49
Massachusetts ..	1.26	0.38	0.01	1.65
Rhode Island ..	2.02	0.61	—	2.63
Connecticut ...	1.25	0.34	0.03	1.61

The data regarding gonorrhea are approximately correct, but as no Wasserman tests were made in the routine examinations the number of cases of syphilis represents only those with clinical symptoms at the time of examination.

The data here presented should be studied with care by those charged with the prevention of disease in the several New England States. It surely argues for better health administration and for a campaign of health education.

In another section we publish some figures taken from the reports of the Provost Marshal General showing the result of the physical examinations made by the local boards and by the army surgeons at the mobilization camps. While these data are in a measure tentative they should receive the careful consideration of the health officials of the New England States, as well as the members of the several Legislatures.

In these days when reconstruction is in the mind of every one, we hope that in the plans that are evolved for the betterment of the States our law makers will not forget that health is the greatest asset of the nation and the states, and unless the vitality of the nation is guarded in the new laws that are to come out of this world's war, we will have failed "to make the world safe for democracy."

THE VALUE OF ARTIFICIAL PNEUMOTHORAX THERAPY AS ASSOCIATE TREATMENT OF PULMONARY TUBERCULOSIS.

BY LEON A. ALLEY, M.D., RUTLAND, MASS.,

Assistant Superintendent and Physician, Rutland State Sanatorium.

WHEN artificial pneumothorax therapy for pulmonary tuberculosis was introduced at the Rutland State Sanatorium in August, 1911, it was looked upon as an experiment, and for experimental purposes was tried out in a large number of cases in the different stages of pulmonary tuberculosis. The results obtained were more or less doubtful and the larger percentage of cases were considered, after a fair trial, as unsuccessful. In 1914 the results reported were as follows: 23, or 31%, of the 74 patients coming under observation were benefited by this form of treatment, while 51, or 69%, received no benefit from it. Many of the unsuccessful cases were due to dense pleural adhesions, or were cases with extensive bilateral disease.

We have found in this institution during the past three years, as has been found in many other sanatoria using this form of treatment, that artificial pneumothorax is not the universal treatment for pulmonary tuberculosis, whether in the first, second, or third stage, or whether the lesion be unilateral or bilateral. On the other hand, however, we believe that it is indispensable in treating certain selected cases which do not respond to the routine sanatorium treatment, and in serious cases of hemoptysis.

Profiting by the results noted in the cases treated from 1911 to 1914 in this sanatorium, during the past three years we have given the course of nitrogen gas treatment to but 21 patients. Our results, however, have been much more gratifying and successful, and we feel that our cases thus treated have shown improvement that it would have been impossible to have brought about otherwise.

Our cases have all been carefully selected, but the number includes patients in the three different stages of the disease, and bilateral as well as those with involvement in but one lung.

Of the 21 cases treated, 2 were in the incipient stage of their pulmonary disease, 10 were moderately advanced, and 9 were in the far advanced stage.

The two incipient cases had unilateral disease. Both of these cases showed marked improvement. One, a man, left the sanatorium over a

year ago, has been working in Boston daily since that time, and to date has had no recrudescence. The other, a woman, discharged last June, is working, and to date has shown no signs of returning activity.

Of the ten moderately advanced cases, six had unilateral disease, and four had bilateral involvement. In the six instances where the disease was confined to one lung, five showed marked improvement following the treatment. The other patient developed a tubercular enteritis, and after a few months of treatment, at her own request, was discharged from this institution to enter a private sanatorium in another part of the State. Physical examination at the time of discharge showed the lung to be in good collapse, the other lung clear. Two of the five cases mentioned above have been working about this institution for over a year now and are getting along very well. Three of the four patients whose disease involved both lungs showed satisfactory improvement. One, after a few doses of gas, decided that she did not wish to continue the treatment, so it was discontinued.

Of the nine in the far advanced stage of their pulmonary disease, two were suffering from unilateral involvement and seven had active processes in both lungs. In the two unilateral cases improvement was marked and very satisfactory. Two of the seven patients suffering from bilateral disease were improved by the treatment. In the five cases where the treatment was considered unsuccessful, except temporarily in two hemorrhage cases, it failed in two on account of recrudescence in the uncollapsed lung. One failed on account of the acute exacerbation of a previously quiescent tubercular laryngeal process. Unfortunately one of the hemorrhage cases developed a hemorrhage from the uncollapsed lung so that the treatment was discontinued. In the other case of hemoptysis the gas could not be continued because of the extensive process in the opposite lung. The patient's life was prolonged for several months, however, by the temporary benefit received from the treatment.

Therefore from the above data we may say that fourteen, or 66 $\frac{2}{3}$ %, of the 21 patients receiving this form of treatment were benefited, and seven, or 33 $\frac{1}{3}$ %, were unimproved by it.

We have met with such success in treating cases of hemoptysis, especially the unilateral cases, with nitrogen gas, that it seems justifiable at least to attempt to check the loss of

blood, if only temporarily, by the pressure obtained from gas in the pleural cavity. From that point alone the writer believes that the artificial pneumothorax treatment can be practically applied in every institution treating pulmonary tuberculosis.

To obtain good results, a factor of vital importance, in fact it may be considered the most important in regard to artificial pneumothorax treatment, is the proper selection of cases. This is possible only after the individual has been under observation for several months, faithfully following out the routine sanatorium treatment. The general make-up of the patient must be noted,—age, mental condition, condition of heart and kidneys, complications, if any, present; and the individual immunity and resistance. The hearty coöperation and confidence of the patient are essential.

All of the above mentioned cases had followed the strictest routine as regards fresh air, rest, regulated diet and exercise for several months previous to the gas treatment, and still failed to improve.

By this careful consideration of the individual merits of each case, we have been able to pick out with greater precision the cases which have given us the higher percentage of satisfactory results.

Absolute rest in bed during the early weeks of the artificial pneumothorax treatment, increases the vitality and resistance of the patient, so necessary at that time, to take care of the extra function called forth from the uncollapsed lung, the absorption from the collapsing lung, and displacement of the heart. The general condition of the patient is always carefully noted and improved whenever possible and as healthy a condition as possible maintained.

There can be no fixed dosage of gas, the amount given at each treatment varies and depends entirely upon the individual and the interval between the doses.

We have yet to observe the many untoward effects often mentioned in connection with this form of treatment, and feel that with a proper consideration of the technique as regards aseptic surgery, a thorough anesthetization of the subcutaneous tissues and pleura, and regulation of the interval between doses, the amount and temperature of the gas, and the rapidity with which it is introduced, the dangers generally in mind may be greatly overcome.

CONDITIONED REFLEXES AND PSYCHO-ANALYSIS.*

By DONALD GREGG, M.D., WELLESLEY, MASS.

PHYSIOLOGISTS speak of conditioned reflexes and unconditioned reflexes. Unconditioned reflexes are those in which a given stimulus is answered by a response such as might normally be expected. For example, when a dog is shown a piece of meat, the resulting flow of saliva is the unconditioned reflex to such a stimulus. If, however, a bell is rung when the meat is shown, and this process is repeated again and again, the dog's saliva will soon start flowing when the bell is rung, regardless of the appearance of the meat. Such a stimulus artificially associated with the unconditioned reflex, produces a conditioned reflex.

Observation of psychoneurotic individuals shows them to be sensitive both to slight emotional stimuli, and to stimuli from many sources. Such emotional sensitiveness is both their strength and their weakness, their joy and their despair. Our poets, artists, and musicians are almost without exception emotionally sensitive. But unfortunately, accompanying such emotional sensitiveness, goes a facility to develop condition reflexes which may easily, seriously interfere with the efficiency and happiness of the individual. Examples of such conditioned reflexes are familiar, but to the individual who is not psycho-neurotic, such reflexes are faint and memories, rather than sharp reactions. A smell of rubber and disinfectant may remind one of shipboard, but is nauseating to the psycho-neurotic. Certain music may remind us of a sad occasion but does not start us sobbing.

Psycho-neurotics usually have an abundance of reactions of all sorts. In fact, "being nervous" usually boils down on analysis to a realization on the part of a patient that stimuli produce excessive or bizarre reactions upon him. Recognition of such excessive or bizarre reactions, by arousing fear, gives rise to other reactions and stimuli, and quickly complicates the situation.

Does not psycho-analysis mean merely the study of the mechanism of the origin of such reactions? Considered from the viewpoint of physiology, are not many of the cases that we see analogous to the dog whose saliva flows when the bell rings—though the piece of meat

* Read, April 17, 1919, at the Boston Society of Psychiatry and Neurology.

may be long since lacking? And is not psycho-analysis, stripped of its glamour and mysticism, a hunt for the piece of meat that formally associated the ringing bell and the physiological reaction?

Not long ago I saw two cases exemplifying extreme and bizarre reactions to emotional stimuli. One was a young woman who found out in childhood that by going on a hunger strike, she could get her desires. This reaction later became so extreme that although she desired to eat she could not bring herself to do so while emotionally upset, but in order to keep up her nourishment, she readily consented day after day to have a nasal feeding tube passed into her stomach, and connected with a bottle of egg nog suspended at the head of the bed. Another case had gone through some family misunderstandings during the time that one of her babies was arriving. Subsequently, family difficulties would arouse pain simulating labor pain. She complained of bearing down pain and of feeling a mass thrusting against her perineum. Her discomfort and subsequent fatigue were serious and interfered with her health.

It is easy to talk of psycho-analysis, the subconscious, buried complexes, mental catharsis, etc., etc., but if it is our object to help our patients to understand their mental life, is it not our duty to have catharsis, like charity, begin at home, and to think simply and clearly ourselves, and not to float off into deep water if we can explain most of our cases in terms of conditioned reflexes, an exaggerated fear instinct, and the universal impulse of self-preservation?

Medical Progress.

PROGRESS OF ORTHOPEDIC SURGERY.

By C. HERMANN BUCHOLZ, M.D., BOSTON.

(Continued from page 645.)

ARTHRITIS.

Nathan¹⁵ has made another very valuable contribution to our knowledge of chronic arthritis. This time he has attacked the problem of arthritis from the experimental side. Three series of twelve dogs each were inoculated with a hemolytic streptococcus, a pneumococcus, and a

staphylococcus. The animals were killed at 3 to 90 days and all joints with epiphyseal ends were examined. He found, thus, that all the marked changes in joint diseases are simple phenomena of an inflammatory process (with the exception of the specific changes caused by certain micro-organisms such as the tubercle bacillus or the spirochaeta.) Variations are due to variations in location, intensity, and duration of the process, to the mechanical conditions existing in the particular joint, and the presence or absence of central or peripheral nerve involvement. From Nathan's findings the classification into infectious and metabolic arthritis seems to have no standing any longer; and he argues that all forms of polyarthritis are due to infections or, on the other hand, all deleterious substances, whatever their nature, will cause fundamentally the same changes. In regard to the focal treatment he says: "Though it is not unlikely that a focus in a tooth is sometimes, and in the throat is often, the point of entry for bacteria, it must be remembered that once a micro-organism has entered the blood, its connection with the port of entry ceases. For this reason, though the removal of the affected teeth or tonsils will prevent reinfection from this source, such procedures have absolutely no influence upon the joint condition as it already exists. However, it must be remembered that a focus in the joint structure, like a focus anywhere else, beside causing the local changes, may be a source of general infection and metastases."

[Ed. Note—Not a very long time ago the treatment of chronic arthritis used to consist chiefly in local applications, besides perhaps, general hygienic advice and indefinite internal medications. In recent years the tide has turned in favor of the so-called focal treatment and now everybody is extracting teeth, removing tonsils, or cutting out some feet of the colon, expecting to heal the joint condition in this way. And, we suppose, everybody has seen some results and many failures, just as before, though perhaps a few more results. Nathan's point of view is refreshing in that he calls attention to the infected state of the joint in many cases and that he reminds us that foci in other parts of the body, such as the teeth or the tonsils, are generally coördinate and not necessarily commanding a position of furnishers of the infectious material. This point of view, however, should not induce us to stop on the road to

bring our patient on "a good health basis" by removing from his body all the infectious foci which are accessible, leaving not out of sight, however, the local treatment of the affected joint.]

Soper,¹⁶ in extending the work of Billings, who in his book on focal infection referred to pus infections of the hemorrhoidal veins and the anal canal, calls attention to the infections of the mucosa and the rectal and sigmoid regions, which are in his experience quite common, often escape recognition for years, and are etiologic factors in the production of systemic diseases. He reports cases of rheumatic pains and swelling of joints, backache, extreme nervousness, etc., which had frustrated focal treatment until the diseased condition of the rectum and sigmoid was detected by proctoscopy. Treatment consisting of daily inflations of calomel powder and oil enemata brought about remarkable results. In the cases presented the inflammation was restricted to the rectum and sigmoid as the mucosa above appeared to be normal in the proctoscope. In other cases the whole colon is affected; these will be discussed in a later report.

Swett¹⁷ has observed that arterial hypertension and chronic hypertrophic arthritis or osteo-arthritis deformans occur simultaneously in a large number of instances. The effect of treatment directed against the hypertension by means of general regime, or by specific medication, is to improve or arrest the progress of both conditions. Therefore, it would seem reasonable to conclude that the etiology of both diseases is often the same thing. The possible influence of syphilis by means of the affection of the adrenal glands is just lightly touched.

Encouraged by the results of Miller and Lusk with the injections of foreign proteins in patients suffering from chronic arthritis, Thomas¹⁸ has applied this method in 86 cases. Intravenous injections of a typhoid vaccine were given in intervals of two to three days, from 50 millions up to 75 millions each time, and the treatment was carried on for one to two months. Rest in bed and search for and elimination of the focus of infection is made a prerequisite to the injections in all cases, save in those in which the patients need the immediate relief from suffering which the vaccine gives. The immediate results consist in an uncomfortable feeling, chill, rise of temperature, and emesis. A few hours

after the injection there is practically complete relief of pain. In two days the pain reappears, but this interval becomes extended with repeated injections. The relief of pain has not been permanent in more than 30%. The remaining cases, however, have done much better than previously treated patients. The author considers this method superior to others he has used and pledges for a more general use.

Kreuscher¹⁹ describes a form of hypertrophic villous synovitis of the knee joint which has often been confused with tubercular disease. It is of an obscure infectious origin and begins as an acute synovitis which becomes chronic with or without enlargement of the joint. The pathological change consists of overgrowth of the synovial membrane and fringes from irritation by the invading organism and repeated traumatism. On opening of the joint, masses of villous tissue are seen. Partial destruction of the cartilage, crucial ligaments and synovial membrane may be observed, but no destruction of the bone. The clinical symptoms consist in a dull pain and feelings of stiffness; sharp pains may be encountered after a long continued traumatization. For the differential diagnosis must be considered: chronic synovitis, rheumatic arthritis, Charcot's joint, tuberculosis and sarcoma (syphilis?). The treatment consists of the removal of foci, absolute rest, traction, vaccine, and injections of formaline and glycerine into the joint. In advanced cases a complete capsulectomy is indicated.

Brackett and Hall²⁰ give an exhaustive and extremely interesting report of their experiences with osteochondritis dissecans of the knee joint. They agree with other observers that trauma plays an important rôle in the etiology. Generally there is no evidence of structural changes except such as have been caused by continued irritation by the foreign body. Most of the patients are men with an occupation requiring a more or less violent use of the knee. The history in typical cases is quite suggestive. A long period of weakness and slight disability is followed by an occasional catching or giving out. These catching symptoms show a great variety and are not so typical as in cases with a displaced semilunar cartilage. Synovitis may be present. The x-ray findings are quite characteristic. A faint but distinct irregular area is noticed on the articular edge of the inner condyle. The lateral view shows an apparent break of the articular line of the inner condyle. One

or two loose bodies are found in any part of the joint. It is, however, to be remembered that not all cases are so typical. For the removal of the loose bodies, the authors recommend strongly the anterior approach and give a few important notes for the technique. Above the patella the incision is to turn slightly outward in order to follow the direction of the quadriceps tendon. The patella should be split slightly inward of the median line, because the outer fragment can be more easily dislocated. The quadriceps tendon is split in layers because of the spiral arrangement of its fibres. It is necessary to preserve the ligamentum mucosum. When the joint is opened one sees an irregular depression, usually on the lateral edge of the inner condyle. A cartilaginous body is found in the anterior part of the joint which corresponds more or less to the depressed area. One case has been especially interesting because it has furnished the missing link. In this case the body was still connected with the condyle by a thin pedicle. In cases of long duration the loose body takes on hypertrophy by additional layers of connective tissue and cartilage and a bony deposit is found in the center.

Legg²¹ reports the different theories on the etiology of the flattening of the upper femoral epiphysis and states that the study of 75 personally observed cases has strengthened him in his original conviction that this affection is caused by a circulatory disturbance at the epiphyseal line due to traumatism. Twenty-six cases recorded a distinct trauma, 24 were cases of congenital dislocation reduced with a considerable traumatism, while the rest gave an insidious history, leaving a possible injury in doubt. This is convincing evidence to the author that trauma is the chief, if not sole, etiological factor which causes the circulatory disturbance leading to the flattening and atrophy of the head of the femur.

In studying 200 cases of orthopedic conditions produced by congenital syphilis, Roberts²² has found several cases of so called Perthes' disease. This led him to believe that this affection is of specific origin and he supports his theory with the following arguments: (1) A negative Wassermann reaction as often found in these cases does not exclude syphilis. (2) Perthes' pathological findings coincide with syphilitic osteochondritis. (3) The course of osteochondritis of the hip is similar to that of many other syphilitic joint conditions, in that the destructive

process is self limited, and that there is a tendency to a more or less complete restoration of function. (4) In his cases of Perthes' disease Roberts has sufficient dental evidence, especially erosions and malformations of the first permanent molars. He points out that we should not necessarily look for fully developed Hutchinson's teeth.

The experiments of Eloesser²³ will help to shed light on the difficult question of the nature of Charcot's joint. By producing an operative trauma to joints of cats which were previously subjected to reaction of the posterior roots, he was able to produce lesions similar in all essentials to Charcot's arthropathy, and draws the logical conclusion that this affection is caused by the combination of trauma and the lack of the warning sense of pain. The operated animals showed typical tabetic symptoms: ataxy, atony, incontinence, cystitis, etc., but no atrophy of bones was found as tested by the deflection method. If it is possible to produce tabetic fractures and arthropathies in healthy animals, the explanation of these lesions as caused by the affection of hypothetical trophic nerves, or as luetic or infectious arthritis, or arthritis deformans should be rejected.

BURSITIS.

Brickner²⁴ is convinced that lime salt deposits are not found within the subacromial bursa, but beneath its floor, generally within the substance of the supraspinatus tendon. The error of many surgeons to locate the seat of such deposits within the lumen of the bursa is easily explained by the presence of adhesions which make the exact location of the bursa difficult. Brickner objects to the third heading in Codman's division: chronic nonadherent bursitis, because adhesions are found in all cases. To overcome stiffness in these cases Brickner places the patient in half sitting position at the upper end of the bed, with the arm fastened as high as possible; gradually the patient will slide down, elevating the arm more and more, and in many cases complete relief of stiffness is obtained the following morning with a minimum of discomfort.

Operative treatment is indicated (1) in chronic cases showing exacerbations, (2) in acute and chronic cases in which automatic abduction in bed, as just described, fails to relieve pain and spasm and to restore function. In those cases where the deposit enters the ten-

don its removal necessitates excision of some of the fibres of the tendon: the defect thus made is closed by a few catgut sutures.

In the discussion the question of the rapid development of the lime salt deposit is taken up by Walsh and Dunlop, who doubt that this is proved and believe that bursitis and deposits are different things and need not be coincident. Dunlop particularly states that four of his patients with deposits got well without an operation. Wolff points out the question of the infectious origin and recommends searching for the focus. This is rather antagonistic to a statement of Brickner, who found the deposit in all cases sterile and found no signs of infection in 200 cases. Moscheowitz has examined the pathological specimens of Brickner's cases and gives the results of his examinations as follows: The lesion is a tendonitis, characterized by necrosis or hyaline degeneration of the tendon with secondary calcification and a reactive granulation tissue around these areas of necrosis and calcification. The morphologic changes parallel the duration of the disease; thus in long standing cases abundant scar tissue is present, while in early cases the granulation tissue is richly cellular. The absence of blood pigment suggests that the necrosis is due to actual death of tendon tissue and not of hemorrhagic origin. It is probably caused by cutting off the meager blood supply of the tendon consequent of the trauma.

PARALYSIS.

In reoperating unsuccessful cases of tendon transplantation, Steindler²⁵ has found the transplanted tendon degenerated into a fine and insignificant bundle of a few "fibres, stretched out and utterly incapable of producing any mechanical action." These grave changes are explained by a vital damage due to destruction of the circulatory apparatus. In order to warrant success in tendon transplantation two points are of fundamental importance: (1) The reconstruction of the gliding mechanism (Biesalski and Mayer); (2) The preservation of the mesotendineum which is the nutritional basis of the tendon. The anatomical relations of the tendon and mesotendineum have been made subject of careful studies by the author, and he describes a few operative problems where those fundamental points are carefully considered: (1) substitution of the anterior tibial by the extensor hallucis; (2) substitution of the Achilles ten-

don by the peroneals. (3) combination of number 1 and 2.

Biesalski and Mayer²⁶ have worked out a technique of what they call physiologic tendon transplantation. Proceeding from careful studies of the anatomy and physiology of the tendon they emphasize the importance of carefully preserving the gliding mechanism and, under certain conditions the mesotendon and the sheaths of the transplanted tendon. They accept neither the tendinous nor the periosteal insertion alone but insert the transplanted tendon exactly in the point of insertion of the paralyzed tendon. The authors have carefully lined out a number of operative plans of which we shall give two in detail as they show the idea in the simplest way: (1) Transplantation of the extensor hallucis upon the anterior tibial through the sheath. From an incision above the ligamentum cruciatum the sheaths of both muscles are exposed and a communication between them is established. Then the insertion of the anterior tibial is exposed and the bed for the new tendon is prepared in that, the lower end of the tendon is split down through the periosteum into the bony substance. The tendon of the extensor hallucis is now cut near its insertion, pulled out from the upper end and pulled through the sheath of the anterior tibial, with or without removal of the tendon of the latter, and fastened into the bed prepared for it within the place of insertion of the anterior tibial. There the tendon is fastened to the periosteum and the split lower end of the tendon of the anterior tibial. (2) Incision over the dorsum of the foot exposing the tendon sheaths of the extensor hallucis and anterior tibial, the thin fascia is now incised on both sides of the tendon of the extensor hallucis, fascia, sheath and tendon are cut below the tarso-metatarsal joint and this entire strip of tissue is transferred and fixed on the place of insertion of the anterior tibial in the same way as described above. Thus not only the gliding mechanism but also the mesotendon remain intact, warranting safe function and nutrition of the transplanted tendon.

Pockham²⁷ has used the following method for stabilizing the foot in infantile paralysis. In a case where the anterior and posterior tibials are paralyzed he inserts a long strip of fascia lata; its upper end is attached to the muscle bellies while the lower end is split and fastened around the tendons with the foot in overcorrected position.

Yergason²⁸ has tried to solve the old problem of stabilizing the hip joint in paralytic cases by using the upper tendon of the semimembranosus as a band. An incision is made from above the gluteal fold to four inches below. The upper tendon of the semimembranosus is cut where it enters the muscle belly and pulled through a slit made into the femur. The belly of the semimembranosus is stitched to the semitendinosus. The operation is best done while the patient is lying on the anterior shelf of a long spica which is put on with the hip in hyperextended position. The fixed tendon prevents flexion of the hip, but allows a certain amount of abduction and adduction.

Tendon transplantation and implantation of silk ligaments ought to be discarded in favor of astragalectomy, in the opinion of McAusland,²⁹ who bases his point of view on the observation of 135 cases. Astragalectomy gives stability and yet preserves an amount of motion fully sufficient for decent function of the foot. The best age is that between six and sixteen years. If done at a later age pain and sensibility are liable to follow. The operation, although recommended by Whitman only for pes calcaneus and calcaneo-valgus, gives excellent standard results in all foot cases, even when only one muscle is paralysed. The statements of this article have not been generally accepted in the discussion; on the contrary, Ryerson, Freiberg, and others are strong advocates of the tendon transplantation. The editor is in agreement with these surgeons and believes that astragalectomy ought to be reserved for cases of pes calcaneus and calcaneo-valgus and perhaps a few well selected cases of other types, but ought not to become a method of choice, in paralyzed feet of any kind.

Ashhurst³⁰ discusses at length the much disputed question of the primary lesion in cases of birth paralysis. It has been recently emphasized by Sever that the fifth and sixth nerves are the first to be stretched and eventually torn. Why, then, asks Ashhurst, do we never see a paralysis of the scapularis and teres major? He warns against placing too much reliance on descriptions of operative findings soon after birth, because they are too vague. On the other hand, in later stages, scar tissue renders exact dissection difficult. So far his negative considerations; in a positive sense he calls attention to the fact that all the muscles constantly paralyzed are supplied by nerves which pass very close to the shoulder joint (suprascapularis, musculo-cutaneous, circumflex, often the musculo-spiral nerve), whereas the muscles which habitually escape paralysis are supplied by nerves which at no part of their course come into close contact with the shoulder joint or the bones which compose it (subscapularis, medianus, ulnaris, posterior thoracic nerves to rhomboidei and thoracalis longus to serratus anticus).

Ashhurst is inclined toward the theory of Thomas and Lange that the shoulder lesion is primary and the paralysis secondary, and rejects Sharpe's advice of operative treatment in early infancy. He advises reduction of the generally existing dislocation under ether after Davis' method in prone position, at the age of six months. The arm is kept in plaster for three months. In older cases, over four years, open operation is indicated: Stern's incision, temporary resection of the acromion from behind, incision of the insertion of the subscapularis; after that reduction is easy. If necessary, the supra- and infra-spinatus tendons are shortened.

Sever³¹ reports the results of operative treatment of birth paralysis after the method advised by him and consisting in a tenotomy of the pectoralis major and subscapularis and, if necessary, an osteotomy of the acromion. He makes it an important point to dissect carefully in order to avoid opening of the shoulder joint, because this is apt to lead to the formation of adhesions. After the operation a wire splint is applied, fixing the arm at or above the level of the shoulder in full outward rotation and full supination. The splint is kept on day and night for three months and during the day only for the same period. So far 25 cases have been operated a sufficiently long time ago to allow conclusions as to the results obtained. These have been very encouraging, consisting in a free and full active outward rotation, and marked improvement of elevation and supination.

The patients became thus enabled to reach the mouth and raise the hand on top of and behind the head. The gain so far has been permanent. Sever advises strictly previous exercise treatment for at least one year and does not operate under the age of three years.

[Ed. Note.—It is interesting to observe that two surgeons proceeding from entirely different theories in regard to the etiology of birth paralysis come to some sort of a common ground in regard to the therapy. This at least seems so if one compares the operative methods of Ashhurst and Sever: in both operations a tenotomy of the

subscapularis and osteotomy of the acromion is done, evidently the essential factors to obtain proper results.]

Thomas³² confirms his conclusions reached six years ago that in cases of traumatic brachial paralysis the flail shoulder is the result of a dislocation and that it is the cause and not the result of paralysis. This is proved by the cure of paralytic cases after the early operative repair of the flail shoulder. Recovery could not have been expected so uniformly if the rupture of the brachial plexus had been the primary lesion causing the flail shoulder and paralysis.

In operating on injured nerves Bristow³³ recommends carefully testing by the electrical current. He uses an apparatus allowing sterilization and applies the interrupted faradic current. Thus it is possible to detect incomplete lesions which are not uncommon in the brachial plexus and even frequent in the sciatic nerve. In such cases it is necessary to operate on the affected part of the nerve only.

(To be continued.)

Obituary.

JOSEPH WEBSTER HEATH, M.D.

JOSEPH WEBSTER HEATH, M.D., died suddenly at his home in Wakefield, May 15, 1919, as he was about to start on his day's call.

He was born in Bristol, N. H., March 16, 1854, prepared for college at the Hampton Institute, N. H., and was graduated from the Medical Department of Bowdoin College in 1877. He practised in Rumney, N. H., until 1882, when he settled in Wakefield, joining the Massachusetts Medical Society the following year, and serving the Middlesex East District Medical Society as censor and as vice-president. For twenty-three years he had been a member of the Wakefield Board of Health and part of the time its chairman.

Dr. Heath was an ardent collector of antiques, and his collection is said to be among the best to be found in New England. He was the owner of a poultry farm at Lynnfield Centre. Dr. Heath is survived by his wife, who was Miss Sarah E. Green, to whom he was married in 1879, and one son, Stanley W. Heath, who manages his father's poultry farm. Another son, Charles E. Heath, died while a medical student,

Miscellany.

COMPARATIVE STATISTICS ON PHYSICAL EXAMINATIONS OF PUPILS OF THE BOSTON PUBLIC SCHOOLS FROM DEC. 1, 1915, TO MARCH 1, 1919.

BY WILLIAM H. DEVINE, M.D., BOSTON,
Director of Medical Inspection.

	1915-16	1916-17	1917-18	1918 to Mar. 1, 1919
Total number pupils examined	99,862	104,287	104,762	80,840
Total number without defects	30,781	38,318	43,128	35,002
Total number with defects	69,081	65,969	61,634	45,838
Defects as follows:				
Defective nasal breathing:				
Anterior	1,292	1,297	1,108	635
Posterior	5,906	5,282	4,975	4,163
Hypertrophied tonsils	18,444	14,806	14,037	9,762
Defective palate ..	351	169	121	60
Cervical Glands ..	18,841	7,746	7,201	3,507
Pulmonary disease:				
Tuberculous	44	22	28	9
Arrested T. B. ..			5	
Non-tuberculous.	683	453	456	392
Question		1		
Cardiac disease:				
Organic	1,320	1,406	1,624	1,250
Functional	1,608	1,716	1,864	1,731
Nervous disease:				
Organic	74	48	46	39
Functional	221	179	138	129
Chorea	43	23	33	12
Orthopedic defects:				
Tuberculous	88	76	63	35
Non-tuberculous.	1,639	1,770	1,774	1,921
Skin	3,071	2,978	2,308	1,680
Rickets	383	326	284	109
Malnutrition	2,110	1,712	2,087	1,840
Mental deficiency ..	431	448	627	465
Totals	56,738	40,458	38,779	27,739
Defective teeth ...	56,750*	55,638*	50,507	35,501
GRAND TOTALS ...	113,488	96,096	89,286	63,240

Comparative statistics are of great value as showing the benefit derived from medical inspection, including the work of physicians, nurses, and teachers.

Allowing for the fact that the school physician is inclined to report fewer cervical glands in each succeeding year, as he finds from his experience that many of these glands are secondary to throat, pediculosis, skin diseases, etc., the table shows a substantial decrease in the number of defects.

The diminution in anterior defective nasal breathing and hypertrophied tonsils is probably due to a great extent to operations and treatments. Pulmonary tuberculosis shows a steady decrease.

Cardiac disease remains practically the same for reasons which have been stated in previous reports. Malnutrition has increased. This is probably due to unusual conditions due to the war.

This year a decrease of 5% in defects of teeth is noted. It is not surprising that dental prophylaxis as carried out in the schools for many years should show this improvement.

* During the year 1915-16, and from October 1, 1916, to January 1, 1917, defective teeth were classed as primary and secondary. In some instances, if a pupil had defective primary and defective secondary teeth, it was recorded as two defects instead of one. In order to avoid duplication of defects, it was thought advisable to record defective teeth as one defect, without regard to whether they were primary or secondary. This method was adopted commencing January 1, 1917, and precludes comparison for the two years.

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126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE JOURNAL OF INDUSTRIAL HYGIENE.

It is with deserved commendation and a recognition of its promise that we welcome the first issue of *The Journal of Industrial Hygiene*, published for May, 1919. This publication is of international interest, and is edited by a representative both of the United States and of Great Britain—David L. Edsall, A.M., M.D., S.D., representing the former, and A. F. Stanley Kent, A.M., D.Sc., the latter country. The honorary consulting editor is Thomas M. Legge, M.D., D.P.H., and the following associate editors and managing editors are included in the staff.

Associate editors: W. Irving Clark, Jr., M.D., Alice Hamilton, A.M., M.D., Every R. Hayhurst, A.M., Ph.D., M.D., Yandell Henderson, Ph.D., William H. Howell, Ph.D., M.D., Sc.D., LL.D., Frederic S. Lee, A.M., Ph.D., LL.D., Harry E. Mock, M.D., J. W. Schereschewsky, M.D., C. E. A. Winslow, M.S., A.M., Dr.P.H.; managing edi-

tors: Cecil K. Drinker, M.D., and Katherine R. Drinker, M.D.

The Journal of Industrial Hygiene is divided into sections: The first presents papers by various eminent physicians and surgeons interested particularly in the field of industrial medicine; the second part is devoted to abstracts of the literature of industrial hygiene.

The first number contains articles of more than usual interest. A paper by Harry E. Mock, M.D., Lieutenant Colonel, M.C., U.S.A., presents a résumé of the development and scope of industrial medicine and surgery. He points out that this aspect of medicine, which has become a recognized specialty in the medical profession, includes every scientific branch of medicine and requires in addition a keen understanding of practical sociology. It covers a broad field, including problems presented by the individual, the family, a large group of fellow-employees, and an employer. It involves the prevention of disease and accidents, constant health supervision, adequate medical and surgical care, and a study of working conditions, hours of labor and wages, the home environment, disability, compensation and benefits, individual physical qualifications for various occupations, with the end that "The workman shall live to enjoy the fruits of his labor." The author comments upon the problems of conservation of man-power and maximum production which every country has been forced to face by entrance into the World War, and upon the application of our awakened consciousness of responsibility to all, both military and civilian, disabled in industry. He traces the history of the development of industrial hygiene from its beginning about ten years ago, through the development of State laws, the definite formation in 1912 of the Division of Industrial Medicine and Hygiene of the United States Public Health Service, and the development of industrial medicine and surgery as a war measure, to the present day, when, through the combined efforts of individuals, organizations, employers, and various state and federal agencies, approximately eight million of the workers of our nation are being benefited by the enlightened era in industry and thirty million more are recognized as needing more adequate protection.

The subject of lead poisoning in American industry is considered by Alice Hamilton, M.D., Assistant Professor of Industrial Medicine at

the Harvard Medical School. Her paper is limited to a discussion of the contributions which have been made by Americans to the theoretical and practical aspects of industrial plumbism. She discusses the most important lead industries in the United States, compares them with similar European industries, and emphasizes the features peculiar to this country.

"The Problem of Fatigue" is discussed by Reynold A. Spaeth, Ph.D., from both the theoretical and practical aspects. He considers fatigue in terms of chemical equilibrium, and the relation existing between muscular work and fatigue, various statistical and psychophysiological tests for fatigue, and the significance of industrial fatigue in ultimate efficiency. An extensive bibliography is a valuable contribution to those who may wish to make further study of this subject.

Another topic of interest discussed in this number is "Telephone Operating," by Anna G. Richardson, M.D., for nine years employed as a physician by the New England Telephone and Telegraph Company. In this article are presented general hygienic problems observed in central telephone exchanges, and statistics are given showing effects of this industry on the eye, ear, nose, throat, digestive organs, and nervous system.

The second section of *The Journal of Industrial Hygiene* presents abstracts of the literature of industrial hygiene, with a list of periodicals which will be examined for material pertinent to the subject of industrial hygiene. Abstracts of American periodicals will begin with the January, 1919, issues; abstracts of foreign periodicals will begin with the latest issues current in the United States in January, 1919.

The Journal of Industrial Hygiene is a journal devoted to a subject of increasing importance; it covers a wide field of international interest, and should prove a contribution of great value and interest to the medical profession.

INDUSTRIAL HYGIENE AND MEDICINE.

THE application of medical and sanitary service to industrial conditions promises an important field for development in the future. A pamphlet which has been issued recently by the Director General of the Working Conditions Service Department of Labor, describing

"Treatment of Industrial Problems by Constructive Methods," contains an interesting survey of the scope of the work of the Division of Industrial Hygiene and Medicine. The Government has recognized that industrial hygiene is essentially a public health concern, which affects the social welfare and industrial efficiency of men, women, and children industrially employed. An arrangement has been made, therefore, whereby personnel from the United States Public Service, including industrial physicians, hygienists, sanitarians, and specialized engineers familiar with problems of light, ventilation, and production, should function under the Working Conditions Service as the Division of Industrial Hygiene and Medicine.

The national program for promoting industrial health attempts not only to control physical working conditions, but also to secure the approval and cooperation of workers. The purpose of the Division of Industrial Hygiene and Medicine is to install and supervise departments of health and sanitation, to introduce and standardize records and reports, to develop and standardize systems of medical and surgical relief, formulate systems of records and reports, develop facilities in industrial centers for medical and surgical care of workers not otherwise provided for, and maintain a register to assist employees in obtaining industrially trained physicians, nurses, and sanitarians.

The research work of the Division of Industrial Hygiene and Medicine undertakes to uncover the causes of industrial sickness and bring about improvements. Specific occupational diseases are investigated to determine their causes, effects, and methods of prevention; and attempts are made to determine the physiological requirements of various occupations as the basis for developing methods of proper placement of workers with regard to physical ability.

The field of industrial medicine is becoming recognized as a wide and important branch of medical service. The measures outlined in this pamphlet give promise of its future development.

MEDICAL RESEARCH IN GREAT BRITAIN.

IN a recent issue of *Science* there has appeared an article which was published previously in the *British Medical Journal*, concerning

the passage of the "Dogs' Protection Bill" in England. That this bill has been allowed to pass its second reading almost without discussion is a matter of deep concern to many British physicians; for it would render anyone who made an experiment upon a dog liable to prosecution. It is believed by many that its enactment would cripple progress in some of the most important fields of medical investigation.

The opinion is expressed in this British paper that it is probable that the prevalent ignorance of the public has made possible the unintelligent agitation and the sentimental appeal which has nearly achieved its purpose in the passage of this bill. That the dog had deserved the sympathy of mankind is unquestionably true; yet it is for the public to inquire, and to judge after due consideration of the facts, whether or not it is essential for the progress of medical science that dogs should be used for experimental purposes, without, of course, any unnecessary amount of pain. It is urged that lay opinion be formed after competent medical advisors, who can be trusted and who have fully realized their responsibility to the public in this matter have been consulted.

MEDICAL ETHICS FUND OF HARVARD UNIVERSITY.

PROBABLY many physicians are unaware of the existence of a Medical Ethics Fund at the Harvard Medical School. Two years ago Dr. George W. Gay, realizing the fact that young physicians not infrequently make embarrassing mistakes in medical ethics through ignorance or thoughtlessness, and that physicians are proverbially poor business men, established at Harvard University a permanent fund of one thousand dollars, the income of which is to be expended annually for two or more lectures to the advanced or graduating classes in the Medical School upon Medical Ethics, and upon wise and proper methods of conducting the business of physicians.

In the issue of the Harvard Graduates' Magazine for September, 1917, in accepting this gift the President and Fellows of Harvard University expressed their gratitude to Dr. George W. Gay "for his gift of one thousand dollars to establish a fund, the income to be expended

annually for lectures upon Medical Ethics and upon wise and proper methods of conducting the business of physicians, as relates to fees, collections, investments, etc., to the advanced or graduating classes of the Harvard Medical School."

In fulfilling the purpose of its donor, this fund will render valuable service to inexperienced physicians.

ANNIVERSARY DINNER OF THE MASSACHUSETTS MEDICAL SOCIETY.

The observance of the one hundred and thirty-eighth anniversary of the Massachusetts Medical Society, held in Boston on Tuesday and Wednesday of last week, June 3 and 4, was concluded by the annual dinner at the Copley-Plaza Hotel on Wednesday evening, at which over five hundred Fellows and guests were present. The retiring President, Dr. Samuel B. Woodward of Worcester, presided. It has been his well merited distinction to hold this office for three years, instead of the usual term of two years, an event which has not occurred since the presidency of Dr. John Homans during the Civil War. In his address at the dinner, Dr. Woodward expressed his belief that physicians should participate more actively in political affairs and that a larger number of them should become members of State and National legislative bodies.

Other speakers, introduced by Dr. Woodward, were Governor Calvin Coolidge of Massachusetts, the Right Reverend Thomas F. Davies, Bishop of Western Massachusetts, Chief Justice Arthur P. Rugg of the Supreme Court, Dr. Joel E. Goldthwait of Boston, Colonel in the United States Army Medical Corps, and Dr. Alfred Worcester of Waltham, President-elect of the Society for the ensuing year.

Governor Coolidge expressed his gratification at the example set by physicians of the Commonwealth in their public service during the war in both military and civilian capacities. Bishop Davies described his own experiences in military service, and emphasized the common duty of the clerical, medical, and legal professions in their efforts for the welfare of humanity. Chief Justice Rugg, discussing the medical functions of the courts and the legal functions of medicine, defined the important field of prac-

tice of the general or family physician as contrasted with the narrower, expert field of the specialist. Colonel Gokithwait described the organization of the overseas medical corps, and expressed abundant praise for the work of army surgeons during the war.

The annual meeting of the Massachusetts Medical Society this year has been a notable success, marking as it has done the return to normal conditions following the war, summarizing in review the accomplishments and advances of the profession in war medicine and surgery, and defining new aspects of the duties of physicians to their communities and to mankind in the future.

MEDICAL NOTES.

RHEIMS MEMORIAL HOSPITAL.—The New England branch of the American fund for French wounded is endeavoring to arouse interest in the plan to erect an American memorial hospital at Rheims, and to raise funds for this purpose. The building fund for the hospital has already been contributed by the New York, Chicago, and New England branches. The endowment fund is to take the form of beds endowed at six thousand dollars each.

Latest reports showed that the New England branch has since 1915 received contributions amounting to \$470,614.89 and has forwarded supplies overseas valued at \$1,852,872. It is estimated that 14,962,354 surgical dressings, 318,366 yards of gauze, 314,124 towels and handkerchiefs, and 711,128 hospital and civilian garments were shipped to allied soldiers. The association, in addition, forwarded seven delivery motors and one ambulance.

WAR RELIEF FUNDS.—On June 5, the totals of the principal New England War Relief funds reached the following amounts:

Belgian fund	\$732,411.67
French Orphanage fund ..	490,218.16
Italian fund	289,031.42
Russian fund	78,445.57

NEW JERSEY REHABILITATION COMMISSION.—Dr. Fred H. Albee, of New York, and Chief of the Surgical Service at U. S. Army General Hospital No. 3, Colonia, N. J., has been made chairman of the Rehabilitation Commission of the State of New Jersey. This Commission was created under a recent act of the Legislature.

the first law of its kind to be passed by any state, which provides especially for the rehabilitation of those crippled in industry.

At a recent visit to Colonia, Governor Edge and the members of the Commission made careful investigation of the methods of organized surgical reconstruction at U. S. Army General Hospital No. 3 with the aim of employing similar rehabilitatory measures in the treatment of those cases of industrially crippled which shall come with the new law.

AMERICAN RED CROSS RELIEF IN SERBIA.—A cablegram recently received from Vladivostok announces that a train load of hospital supplies and drugs is now being distributed by the American Red Cross among the hospitals on the Siberian front. The commander of the Siberian Army has expressed his gratitude to the American Red Cross.

AMERICAN ASSOCIATION OF ORIFICAL SURGEONS.—The thirty-second annual convention of the American Association of Orifical Surgeons will be held on September 15-16-17, 1919, at the Congress Hotel, Chicago. The program will include addresses and papers, clinics, and operative demonstrations.

OKLAHOMA TUBERCULOSIS SANATORIA.—Through the efforts of the Oklahoma Tuberculosis Association, funds to erect three tuberculosis sanatoria, two for white and one for colored persons, have been appropriated by the Oklahoma Legislature.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 24, the number of deaths reported was 220, against 215 last year; with a rate of 14.41, against 14.29 last year. There were 37 deaths under one year of age, against 30 last year.

The number of cases of principal reportable diseases were: Diphtheria, 49; scarlet fever, 65; Measles, 22; whooping cough, 17; typhoid fever, 2; tuberculosis, 38.

Included in the above, were the following cases of non-residents: Diphtheria, 9; scarlet fever, 11; measles, 2; whooping cough, 1; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 1; whooping cough, 3; tuberculosis, 19

Included in the above, were the following non-residents: Tuberculosis, 2.

Influenza cases, 21; influenza deaths, 4.

INFLUENZA IN BOSTON.—On May 20, four new cases of influenza and two of pneumonia were reported to the Boston Health Department. On May 21 there were reported five cases of influenza with one death and six cases of pneumonia with four deaths.

EXAMINING PHYSICIANS CLUB OF MASSACHUSETTS.—A meeting of the Examining Physicians Club of Massachusetts was held at the Copley-Plaza Hotel in Boston on May 20. Lieutenant-Colonel Percy Brown and Major A. W. George spoke on the part which the x-ray played in the war. The following officers were elected for the coming year: President, Dr. Herbert H. Howard; vice presidents, Dr. C. S. Benson and Dr. H. F. Day; secretary, Dr. W. P. Coues; treasurer, Dr. Robert C. Gwin; executive council, Drs. J. S. Phelps, J. F. Edgerly, F. J. Cotton, J. H. Stevens, and D. E. Brown.

BOSTON LYING IN HOSPITAL.—During the year 1918, the Boston Lying-In Hospital admitted 1208 patients, and 998 babies were born and cared for. The Out-Patient Department has recorded 7,687 visits to the pregnancy clinics made by 2842 patients. 1392 patients were attended at delivery in their homes, involving approximately 14,000 visits by attending house officers and externs. In this department, 1400 babies were born and cared for.

The annual report for the year shows that five house physicians have been given six months' obstetrical training and one hundred and seventy-six medical students or graduates have been given special training. The Training School for Nurses graduated fifty-seven nurses with special obstetrical training.

During the last forty-six years, 25,791 patients have been treated in confinement in the Hospital, and 25,266 babies have been cared for. 49,796 patients have been attended in their homes, and 49,354 babies cared for.

WESTBORO STATE HOSPITAL.—Major Walter E. Lang has been appointed superintendent of the Westboro State Hospital, to succeed Dr. H. O. Spalding, who has resigned. At the present time, Major Lang is stationed at Debarkation Hospital 3, New York. Before he entered

the service, he was assistant superintendent of the Allentown Hospital.

HOSPITAL AID FOR SERBIA.—In order that the American Women's Hospital may render the aid which the Serbian Government had asked for, the sum of \$250,000 must be raised. Of this amount, the sum of \$40,000 has been allotted to Massachusetts. If the necessary funds can be raised, two mobile hospitals, automobile dispensaries, doctors, nurses, and full equipment, will be sent to Serbia.

The service which this organization has already rendered to the French Government is notable, and it is the hope of the French Government that it can be continued for two years longer. Hospital No. 1 is at Luzaney coöperating with the American Committee for Devastated France, and is equipped with one hundred and fifty beds. Hospital No. 2 is at La Fère Milon, France, and is the center of a small group of dispensaries.

The contemplated unit will work in Serbia as Red Cross hospitals, in conjunction with the Scottish Women's Hospitals. The director of the American Women's Hospitals is Dr. Inez Bentley. Women physicians of this country are ready to go Serbia as soon as the necessary funds are raised.

Wellesley College is also assembling a unit to go overseas under the American Women's Hospitals. The money needed for this unit will be raised by the Alumnae Association. When organized, this group will operate at Belleau Wood.

SOCIETY NOTICE.

THE HARVARD MEDICAL ALUMNI ASSOCIATION will hold a meeting in Cambridge on Commencement Day, June 19, 1919, at 12.30 P.M., in Harvard Hall, Room No. 5.

RECENT DEATH.

DR. FRANK JUSTIN BARKER died a few months ago at his home in Concord. He was born in Fitchburg, Mass., in September, 1830. In 1858 he graduated from Dartmouth College, and began the practice of medicine in Portsmouth, R. I., in the same year. He later practised in Acton, Mass., for about nineteen years, after which he studied rectal surgery at the New York Polyclinic. In 1912 he moved to Concord where he resided until his death. Dr. Barker served on the Public Health Board of Concord and was doctor for the Middlesex School for a period of two years. He was a member of the New England Pediatric Society and Honorary Member of the State Board. His death was caused primarily by overwork during the influenza epidemic. He went to Carthage, New York, for a ten days' rest and was stricken with angina pectoris and died in December, 1918.

The Boston Medical and Surgical Journal

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Address.

ORTHOPEDIC PROBLEMS IN WAR. A LECTURE AT THE ARMY SANITARY SCHOOL, AMERICAN EXPEDITIONARY FORCES.

BY COLONEL JOEL E. GOLDTHWAIT, BOSTON,
Senior Consultant in Orthopedic Surgery.

THAT which I have to talk to you about this afternoon has to do, of course, primarily with that which the Division of Orthopedic Surgery has to offer the Army Medical Corps; but I hope that apart from the military aspect of the work, some of the principles that have been worked out will be of interest to you because of the advantage which these principles are bound to exert upon civil practice. It seems to me that one of the most obvious things in connection with this war experience is that we are never going back to the same conditions in our civil practice that we have been willing to follow before. Certainly the treatment of the industrial accidents at home is never going to be on the same plan that it was before, and if I am not mistaken the experience that we have had over here means that the services in our civil hospitals will have to be pretty much revised. The fundamental reason for this is that the one thing that all are interested in—the

Army, the public, and the wounded men—is: "What can he do with himself when he is through with that which the Medical Corps can do for him?" Formerly, of course, in the army organization, the policy was simply to get the man out of service as soon as possible after he had been injured, but with the immense number of casualties which the British and the French armies had—the German Army also—it became absolutely necessary for them to think in terms not just of the immediate treatment of the wound but such treatment as would insure the seriously wounded man being the least burden to the nation and also to insure to the Army the return of the greatest possible number of men to the ranks for further service. It would seem absolutely impossible for the British and the French armies to have been maintained at their proper strength—the same thing is true of the German Army—had it not been for the work of the medical corps, which was made responsible for getting these men as nearly perfectly well as was possible so to do. In the British Army it was demonstrated that nearly 75 per cent. of all the wounded men were returned to the line or returned to the Army for duty after their treatment had been completed. That made it necessary to plan treatment and care entirely different from the ordinary care which the armies had previously considered

necessary; and in the British armies, after two years of experience with a great many non-effectives, the nation turned to Sir Robert Jones, the orthopedic surgeon at Liverpool, and gave to him practically the whole responsibility for trying to assist the seriously wounded in the hope that he could do something in the way of returning them to duty. Entirely apart from what it meant to the man himself, the British nation needed man power and it turned to Sir Robert Jones to work out the problem. He took it up with the result that nearly 75 per cent. of the wounded men were returned to the service.

Now when war was finally declared against Germany by our Government, the first two requests that came to us for help were that our nation send six base hospitals to help the British, and twenty orthopedic surgeons to help Sir Robert Jones. These were the two greatest needs which the British Empire had at that time. It was my privilege to be asked to get together this group of orthopedic surgeons and go over with them, study the situation, and then plan the organization for our own army. Twenty officers sailed within three weeks of the time the request was received and were assigned upon arrival to British orthopedic centers. This group of men has been the nucleus around which practically all the structure of the orthopedic organization which we are using in the A. E. F. at the present time has been built. The officers were picked in the first place because of unusual fitness, and the training which was given them in the British orthopedic centers has enabled them to offer to the American A. E. F. most useful service.

As you will see as we go on, the work of orthopedic surgery in time of war is of very different magnitude from that which existed in civil life. In civil life the number of cases that are of an orthopedic nature is relatively small, while in the army, especially in combat, the number is very, very large indeed.

The work of the Division of Orthopedics divides itself quite clearly into two parts: One which has to do with getting the men fit for combat or full military duty, and the other taking care of the men and restoring function after they have been wounded. These are two perfectly distinct parts of the work.

In the first place (that which has to do with the pre-combat or training period) the problem consists in getting men physically fit,

so that the human machine, which if used rightly, will stand severe strain, is ready for that strain when it is applied. In a nation that has developed as has ours, with its educational system based practically entirely upon the intellectual training and paying no attention whatever—except in isolated cases—to the physical development or physical education of our people, the natural result is that when war was declared there were in our country a large number of young men who were physically far from being fit for the physical effort that would be required for military duty. As you probably know, if you remember the figures, in the first draft that was made for the National Army, 19 per cent. of all the men that were examined were considered unfit for service because of flat feet alone. This is just one physical defect. Nineteen per cent.—nearly a fifth of the total of our young manhood! And of course, beside this, there were a lot of other conditions of physical weakness.

The same conditions were shown to exist in the first divisions with which we were obliged to work in the winter of 1917. The first units that were sent over here—the 1st, 2nd, 26th, and 42nd Divisions—were made up either of regulars or National Guardsmen—and of course the regulars were simply skeleton units of regiments with the personnel almost all recent volunteers, some of whom had not had a gun in their hands until they were put on ship. They were naturally not trained men: they were fresh volunteers, and with those four divisions the men were in such condition with so much difficulty with feet and backs that unless there had been some method worked out for handling the conditions, the wastage would have been very large. The number that would have been scrapped because of feet and back troubles, would have been such a large per cent. that it would have been very difficult to maintain the units. That led to a study of the problem and to a decision upon a plan that was applicable—not simply to an individual but applicable to groups of men, since the need was for hundreds and not for fives and tens. It became quite obvious as the matter was studied that the flat feet or weak backs which so many of our young men have is nothing but a question of the use of the body: the flat feet or local trouble being only result and not the primary condition. If you will study the anatomy of the human body

you will see that if a person stands fully erect the muscles of the feet and lower leg are in such position of physiological tension that the bones of the feet are held in position, and you need have no anxiety or concern regarding weak or flat feet. Flat feet are frequently due to the way the body is used, and the treatment consists in showing the man the proper way to use his body. If you view it that way your problem is a simple one. A man with flat feet should rarely be on sick report: he should not be in a hospital because of that, except for temporary acute strain. It is a question of training and not of medicine, and the moment you put it on this basis you relieve your regimental surgeon of an enormous amount of work which otherwise results at "sick call." You put the man where he should be; you make him understand that it is his own fault; that if he will only do certain things he will get over it. If he has trouble with his feet he should stand up straighter, and you practically eliminate the weak-footed, flat-footed men that have been such a nuisance in the army up to the present time.

The problem was presented in such magnitude last winter that it became necessary to do something—not for individuals, but for groups—and after working the thing over it became obvious that the best thing to do was to take these men with weak feet and badly poised bodies—the type that we have seen so much at home, that has prided itself upon its slouched carriage—and properly train them. The human body was never made to be used in this drooped manner and when so used, weakness will inevitably develop under strain.

The problem was finally worked out as follows: The men with weak feet or weak backs or with badly poised bodies, were assigned to a special organization. They were segregated, and a military camp was started to see what could be done with them. To give you an idea of the magnitude of the work in these early units—there was one 28-hour period of military maneuvers last winter with one battalion, and after the maneuvers were over there were 138 men sent to the hospital out of that battalion, with trouble with their feet. That was out of one battalion alone, and it was not a whole battalion at that: 138 men after only 28 hours of maneuvering, and they were not hard maneuvers and it was evident that if our army was going to be made up so much of that type of man-

hood there was not much question as to what the end would be. These men were put in a special training organization. They were there told the reason why the human body should be used erect and what happens when a man is standing up, with his body fully erect, with the chin pulled in, and with the weight on the balls of the feet. In such position one naturally will get the spring of the arch of the feet and the muscles will be in such physiologic contraction that they will hold the bones together. It is the position of ease, not of strain, once you have learned it. It was explained to the men and they were told over and over again. They were made to realize that the way they stood was the cause of the trouble with their feet and that the cure was to get the proper carriage of a soldier. They were told to pull in their chins and it was explained to them that one cannot "suck up his guts"—which the drill sergeant is always talking about—unless he pulls his chin in.

You should all realize if you hold your head forward you cannot pull up the diaphragm; on the other hand, that you cannot pull the chin in without pulling the diaphragm up (indicating) since the suspensory ligament of the diaphragm is attached to the base of the neck at the side of the low cervical spine. This being the case, since yawning or sighing are efforts to raise the diaphragm and relieve the abdominal viscera, it is almost impossible to do either without drawing in the chin. It is difficult to yawn with your head forward; it is difficult to sigh with your head forward. This is all explained to the men as a simple piece of mechanics, in order to breathe rightly, and to get the digestion to work properly. A short lecture was prepared—talk it had better be called: talk which the men could understand—and the orthopedic surgeons of the divisions gave that to all of the men of the divisions and then looked the men over, those having trouble with their feet or backs being put by themselves. The special training was largely military in character—manual of arms, squad drill, bayonet drill, etc., but always from the erect position. The periods of any drill were made short but with constant emphasis on the form: short, snappy periods of marching or other duty with quick recovery until the action became automatic.

If there was much difficulty so that real flat foot existed with marked weakness, the heels of the shoes were raised on the inside so that

the weight was more properly borne. With this position the gait will be better and the man is made to realize that in walking he should walk with the feet nearly straight ahead. With the cases of extreme flat feet it became, of course, a question of possible treatment. What could be done to save the man for the army? Of course, with actual flat feet the man couldn't be depended upon for a long hike. Therefore, he had to have some special treatment, and the treatment that was worked out had to conform to military needs and possibilities. Foot plates were out of the question, and while in civil life these may be necessary because people will not pay attention to instruction, having to do with curing the weakness with the army it was different. We had that large group under authority where we could say, "Do such and such things." And the result was that after a reasonable period under this special training a large number of these men were returned to duty without flat feet and fit for whatever service was required of them. Where special support was needed temporarily a leather strap worn as a figure of eight about the ankle and under the instep has met the requirements and not interfered with the development of the muscles. This can be worn inside the shoe without chaffing. (Demonstrating).

Now, of course, when the weight is on the foot and the foot is relaxed, the foot sags to the inside and the cuboid will be pushed to the outside. The cuboid should be under the tarsal bones and the weight should come on this (indicating) and with the cuboid in place you rarely get flat feet. On the other hand, if the foot spreads that way (showing) as it does when the arch drops, the cuboid is pushed out to the side and you not only have flat feet but you will never cure the condition as long as the cuboid is displaced. If the cuboid is out of place you will always have the foot wrong mechanically. To correct this we simply made a strap that would go round the foot over the stocking (Fig. 1). This is an ordinary piece of goat skin which was the only thing we could get at that time, but they have been made of pretty much everything, and many thousands have been used. The strap comes directly over the cuboid, just behind the fifth metatarsal, and then under the foot and around the ankle. The buckle should lie directly behind the inner malleolus, where there is a natural depression. A man can march all day with such a device and

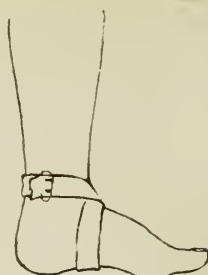


FIG. 1.—Figure-of-eight ankle strap.

every time he steps he steps into a stirrup, which tends still farther to correct the position. It does not interfere with the muscle action but it simply gives the needed support and little by little the foot comes back to proper shape and the condition of weak feet or flat feet is corrected. This simple strap, which is called the figure eight strap, is extremely useful for flat feet, both in civil and military practice, since it acts in a constantly corrective manner. The manufacture of the straps has been carried on by men who were not of combat fitness.

There is another type of foot difficulty that is very common and the result of the type of shoe that has been worn so much with a pointed toe and especially with a short shoe. This type of foot is spread across the front and affects the big joints and causes more or less of crumpled toes. These men always get sore joints; they have to wear a shoe that is much too wide and they also have calluses on the balls of the feet—a very troublesome foot and the source of a great deal of difficulty to the man and a nuisance to the regimental surgeon. This represents, when you analyze it, simply a spreading of the anterior part of the foot, a stretching of the ligaments that hold the foot together: and all you need is something to hold the foot together that will not interfere with the use of the foot for marching, such as these little straps (Fig. 2). A strap of this kind applied around



FIG. 2.—Anterior arch strap.

the front of the foot, just behind the joints, with the buckle placed in the depression which there is just back of the head of the fourth metatarsal, will hold the foot together with no pressure over the joints. The support comes directly back of the joints, and as the foot is held together the heads of the three middle metatarsal bones will be raised and the common painful calluses relieved. You cannot hold the foot together without raising these bones and the troublesome calluses will disappear in a short time without local treatment. So with these two straps the figure of eight for the long arch, and the short one for the transverse arch, you have two simple measures which make it possible really to cure conditions—not only relieve but really cure conditions which have represented one of the most troublesome problems in the army previous to this time. When you realize that 19 per cent. of the first draft army was exempted from service because of that, I think you will realize what it means.

The other condition which you find commonly in the period of training or preparation is weak back—the fellow with the creak in the back, backache, and lumbago and all that sort of thing. The low back, together with the feet, are the two naturally weak parts of the body. The spine and pelvis are held together by muscles and ligaments. The bones in the foot are held together by muscles and ligaments. Therefore, if the muscles of the body are not rightly used or are overtired, it is an inevitable thing that you will have strain and weakness with later joint weakness; not that you may have it; it is inevitable. Just the same as if you use the body wrongly you will have trouble with the feet, so if the trunk is used wrongly you will have trouble with the back. One is just so much a mechanical certainty as the other. Now if a person stands drooped as I am standing now (demonstration), the abdominal muscles are entirely out of commission. The abdominal wall is entirely relaxed. If I am struck even a light blow on the abdomen in this condition it will knock me out because there is no muscular protection. In this position now the back or spinal muscles are holding the entire support of the body. The muscles in that position are under strain and no muscle can stand strain for more than a certain length of time before relaxing. If you stand drooped, as I am standing now, the muscles of the back are under strain; in a short time they become tired and you change

to the other side; the muscles getting more and more tired, until the strain is put upon the ligaments, and no ligaments are made that will not stretch after a time if undue strain is put upon them. Then you begin to have aching in the back, the back being tired, and difficulty in sleeping because of backache, and extreme weariness in marching.

You will always have a large number of men in any military organization with these weak backs and weak feet. These are the two most common things. If you can eliminate them you needn't worry much about the other conditions. Now the same things that apply to foot conditions apply to back conditions. The men with weak backs were sent into the training organizations the same as men with weak feet, and it was explained that the trouble with the back was due to the way the body was used. If you stand erect, the muscles and ligaments of the back are all in normal physiological use. Every movement is made from the correct position, and that position can be maintained for an indefinite time almost free from weariness. Once that is gotten into the mind of a man and he realizes it, he comes in from his hike much less tired than he was before and it doesn't take long before he carries himself that way naturally. Now remember that the question of posture is just as easy to train a man to as it is to train a man in any other thing that requires physical effort. The shaping of letters as we train the children is just a question of muscle training, so also is the manning of arms, and after a time both become automatic. It is the same with the use of the body as a whole. Once a man has been well trained he uses his body automatically, and he becomes conscious of doing it otherwise rather than conscious of doing it properly. And one of the great things this army of ours is going to do for our nation is to put back into our population a large number of strong, healthy men, well poised, vigorous specimens, who are going to be the fathers of the next generation. One of the best things that is coming out of the war is that our manhood is going back to the States and our men back to their homes, strong healthy specimens. There is no question about that at all, and their children will be strong and well, and we won't have so many poor unhealthy children born into the world as we have had in the past, nor the constant struggle to keep them here.

When you realize the way it has been handled at home you will see many good things coming out of all this. You saw in the paper the other day that, among the units first to be demobilized were the development battalions. Orders said no man suffering from flat feet would be exempted from the service in the army; they should be taken in and trained and not scrapped, and given a chance, and that idea developed at home into so-called developmental battalions. Now, among the first units to be demobilized are these developmental battalions, and in them at that time there were 93,000 men. In other words, among our camps at home we have 93,000 men who have come in the last draft and put in there because of weakness. These men, while perhaps not yet perfect, will be much better for the training and they have had much explained that will be helpful. It has been made clear that each can be just as good as any man if he goes at the thing rightly. Each can be a strong, fine physical specimen of mankind just like any of his mates.

Now just one word in illustration to make you realize the thing I have just said, that once a man has learned to use his body rightly he will never forget it. A number of years ago, a broken-down physical wreck of a man was under my charge at one of the hospitals; he was all shot to pieces, but after a couple of years the man was well enough for duty, and he was given a job in our office as doorman and porter, and there he worked for a good many years. One day a British Lieutenant-General, an old-time British war-horse type of general, came to the office by appointment and this man opened the door and let the General pass on, indicating to him the room in which he could find me. That was the only intercourse these two men had. The General came into my office and said, "Where did you get that fellow?" I, not knowing what he meant at first, he added, "That fellow at the door," and then I told him hurriedly what I knew about him, and he said: "I don't mean that. He has been in our army." I said that I didn't think so; that he had been in our country 13 years, but the General scoffed and said, "He has been in our army," and nothing I could say changed his opinion. When he went out John opened the door for the General and when he passed him he said, "What regiment were you in?" John snapped to attention, saluted, and told him. The next day when I asked the General how he picked the

man out, he looked at me with an expression of infinite pity. "Why, once a man has been trained in our army he never loses it." The only interest he had was the regiment in which he had been trained. He had been a cripple a long time but the General saw something that meant only one thing to him and that was that he had been in the British Army, and the only thing that interested him was that regiment. Now this war has given us the opportunity to get our men trained so they will not have lame backs and flat feet, and when the country needs them we won't have to scrap 20 per cent. right off, or especially train them before we can make them fit for combat.

President Lowell, the other day, made the remark, according to the daily press, that if our nation does not see as a result of this war experience the need of putting into our educational system that which has to do with proper physical training of the body as well as intellectual training, we have missed a very great opportunity. When that sort of thing is realized it means that we are going to have a stronger, finer looking lot of men to depend upon for every detail in our national and private life.

Now it hardly needs any further argument than this. A man going over the top doesn't want to be slouchy and relaxed; he wants to be up on his toes ready to jump, run, or hide, or hit; a man isn't at his best if he can't jump or run quickly, and he can't do it if he isn't well trained. He wants to be up erect so that he can hit a blow that has the full power of his body behind him when he needs a strike.

On the strength of this a great many men have been made well and saved for the A. E. F. During the winter of 1917, when there was relatively small call for our men for combat, it was possible to keep the men long enough at the special training to make Class A men of them. In the last four months, however, it has been necessary to change the policy and make a compromise due to the military necessity. Since last July there has been such a demand for men of military units, and there has been such a constant stream of men going through that it has been impossible to keep the men in training battalions long enough to make them fully well. All that could be done was to fix these men up as fully as possible and assign them for Class C duty. They could not be made well because of lack of time. The work

consisted in fixing their shoes, giving them straps, giving them a few talks and as much training as the time allowed. Since the army began its active offensive in July, which, of course, has been kept up ever since, great numbers of C men have been used, and A men, who would otherwise be employed, could be released to fill up the combat units. For instance, in a very short period, 1,200 Class C men from the training organization were sent at one time in one group to staff the hospitals in the Toul area, men who were not equal to the long strains of combat. One thousand men went for prison guard duty; another thousand for extra personnel duty around hospitals; a lot of chauffeurs and motor mechanics have come from the training camp, men who have had suitable technical training but whose physique was not up to combat. So it has been necessary to use the camp, not as a place to make men really fit, but to show them how to get fit, and to serve as a sorting station. The men who were used for the special splint teams, were taken from the training battalions—men not equal to combat but perfectly satisfactory for the kind of work they were given to do. The average man you see isn't yellow; he isn't a quitter; he wants to do the thing, but physically he may not have the stuff in him. The minute you put the thing up to the man and make him realize that it is a weakness which he can correct and of which he ought to be ashamed as much as any other weakness, the man is usually saved.

PART II.

There is a remark which should have gone with the talk just completed. I have just stated to Major Boothby a remark made to me a few days ago by a man who has studied the situation quite fully: that while we have lost a good many men over here we have undoubtedly caused a much larger number than those killed by developing and making them physically well men, who would otherwise have been lost in a reasonable period of time. I think that a very fair statement.

When it comes to the question of combat and injuries of combat, certain principles have been worked out for taking care of the problem with reference not only to the immediate treatment but with reference to the ultimate condition of the man. As the subject was studied in the very beginning of our activities it was evident that the remark of the Director-General of Med-

ical Services of the British Service, "Remember that your reconstruction work begins in the trenches," was true, and to meet this the following organization was planned.

In the first place, in order to meet the needs of an army that was being planned for us, it was necessary to have some standard system of splinting, or standard types of splints that would be used by everyone. You can see it would be hopeless and cause great confusion if Smith, Green, Brown, and Jones had their own special splints. The supply department, in the first place, would have found it impossible to meet the demand and the wounded man would have suffered; because, as he was moved from hospital to hospital and the splints changed every time, it would not only be harmful for him but he would soon get the idea that nobody knew anything about it. In June, 1917, a conference was held in one of our hospitals then serving with the British, and recommendations were made for standard splints to be provided in our army, and in October the "Splint Manual" was issued. In order to make it possible to meet the need it was necessary to have splints that were the simplest possible for construction: they had to be made over here and only certain materials were available. It was necessary to have splints that could be made by ordinary labor and that could be made by the thousands and hundreds of thousands. They must also be easy to transport as well as simple to apply. Of course in this proposition we had the benefit of the immense experience of the British and the French, and seven types of splints were finally decided upon that were to meet practically every need that would come into the army. When you see in the museums the number of patterns of splints that have been devised and realize that it has been reduced to seven, you appreciate what an immense saving that has been to the army, and what a great advantage that has been, not only to the wounded men, but the cause of medicine in general. A principle is involved in this that should be reflected into civil life, which is, that there cannot be six or more different ways of doing the same thing that are equally good. In civil life there have been any number of ways of doing things and each man thought his way was the best. But here, with the help of the experience of the British and French, simple sufficient standards were decided as being the best.

The principles of the splints come down to

two very simple ones. One is that of fixation of the wounded part so that undue harm will not be put upon the tissues in handling, and the other that of traction to overcome the pull of the muscles which have been bruised and are thrown into a state of spasm. So that the two principles of fixation and traction were the basis of the desired treatment and the splints which have been adopted not only meet the requirements, but are much the same as those used by the British organization. For the injuries of the leg the Thomas splint has been adopted, and this, without question, has saved more lives than any other one appliance that has ever been devised (Fig. 3). The splint is

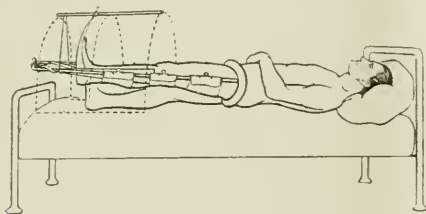


FIG. 3.—Thomas leg splint.

adaptable for almost all injuries of the leg, from the hip joint down—except injuries of the foot; you have to have something else for that. It consists, as you see, of the ring and two rods. The pressure of the ring should be on the tuberosity of the ischium, and the extension is attached to the bottom of the splint. The British have used this splint not only for the treatment of fractures in hospitals, but they have used this in the transport of patients from the field. For our own organization we have adopted for the field splint a different pattern because it is easier to apply and meets the needs almost as well. This is a pattern of splint devised by Colonel Keller (Fig. 4), of the Medi-



FIG. 4.—Hinged half ring splint applied for transport.

cal Corps, and by Colonel Blake, M.C., so it is called the Blake-Keller modification. It is a half ring, so you can use it on either side. It is simpler for packing and transport, and it is

the best splint in the forward area. For the stretcher cases in the battlefield this is the splint that we have made standard, and it has been used in all our work since the first of last July. It is very simple, as you see. It is used in the field where the man is picked up, since it can be applied in a hurry, thus saving your stretcher-bearers as well as the wounded (Fig. 5). This loop is put over the boot, and buckled.

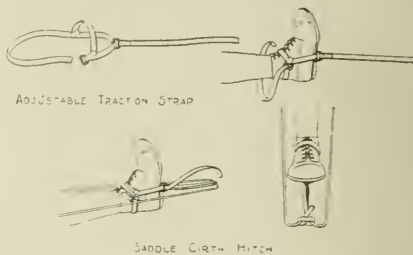


FIG. 5.

The loose end of the strap is fastened to the end of the splint to get as much extension as you think necessary. It is always put on over the boot; never take the boot off, as the strap without the boot would interfere with the circulation. The other supports are obtained by using slings tied about the splint, as here shown (Fig. 4).

So that you have with a splint like this, a splint that can be applied in a very few moments, and with which the man can be handled and gotten to the rear fairly easily. Now the importance of this is, of course, tremendous, and you who haven't been at the front and seen the work and studied the thing can hardly appreciate just what its great value is.

Previous to the battle of Arras, in 1917, the mortality for fractured femurs alone in the British Army was 80 per cent. in the forward area; 80 per cent. of all femurs died in the forward area. Because of the great mortality, just before the battle of Arras the third British Army started to apply splints in the field. The Thomas splint was used for the thigh injuries and trained stretcher bearers were used who could apply a splint like this with extension, with a field dressing to thigh and get away with it in no more than two minutes' time. Now, I fancy there aren't many men in this room who can put that on a man with a broken femur and put a dressing on it, and tie the slings in two minutes' time. They were trained to do that,

and our men are similarly trained. Every move counts. These splints have been put on right on the battlefield; and this has been continued since last January when our men began their raiding parties. The stretcher bearers have rivaled each other to see how far forward they could carry these splints, until finally when a raiding party went over the top every party carried with it a certain number of stretcher bearers and stretchers and with them went the Thomas splints, leg and arm splints, and they were applied in No Man's Land or the German trenches, wherever the man fell. When such a system of training was worked out in the British Army, and which has been practically copied by us, it meant the difference between a mortality of 80 per cent. for femur cases such as they had in the beginning, and a mortality of not over 30 per cent. At the battle of Arras the British Third Army had over 60,000 casualties pass through the casualty clearing station—our evacuation hospital. Of that number 1,009 had fractured femurs, and the mortality in that fight when the stress was the greatest, when they had things working under great disadvantages, the mortality in that fight was cut from 80 per cent. down to 30 per cent. Many times men died, not because of the original wound, but from the injury of transport. A man may be badly wounded and lie out in the field two days and not be badly shocked when you find him. On the other hand, a man may be picked up a couple of hours after he is wounded and be brought back, however, in great shock. Moving a man around with the bones loose inside the muscles may lacerate the muscles and tear the blood vessels or the nerves to such an extent that the man either loses his leg from the rupture of the vessels, or develops such a state of shock that he doesn't get to the evacuation hospital alive. This has been clearly demonstrated as a principle, and Colonel Crile, in his last article on "Shock," in his short, terse sentences on his things that you are to do, says: "Put on the Thomas splint as far forward as possible," and he is talking about shock. Now that is the first principle of the treatment of your wounded man—get him in alive. That's the first thing, and to get him in alive and in condition so that the surgeon can operate on him, or fix him up; this splinting is of the utmost importance. Previous to the use of the splints in the British Army, not only a large number of femur cases died, but a large

number of them, when they arrived at the C. C. S., were in such a state of shock that they could not be operated upon and had to be de-shocked before they could undergo operation, which, of course, lessens the chances of recovery and gives the infection a better start. Now, in the battle of Arras, not only did a large number come in, but every one arrived in such condition that the surgeons could perform the operation immediately.

This is so important that it has been made a definite part of the training of stretcher bearers and ambulance corps men in all our units, and this has been one of the special tasks of the orthopedic surgeon. The orthopedic surgeons assigned to the divisions have given a regular course of instruction for the stretcher bearers.

When you get your man into the evacuation hospital, the closing of the wound is carried out by the surgeon, and in our organization the chief of the surgical division has taken charge of the case at this period; getting him there is the duty of the divisional orthopedic surgeons. After he has had his operation performed, then the question of putting him up in proper splints begins again, and at first the surgeons tried to treat and splint the cases they were responsible for themselves. But since this did not work out satisfactorily, splinting teams were organized. And since the St. Mihiel fight as soon as the surgeon has finished the operation he steps aside from the table and the splint team assumes charge for dressing, splinting, and transport. The team is composed of one orthopedic officer and two enlisted men and these enlisted men have all been Class C men salvaged through the training battalions. The splints are put on and arranged in standard position. Then they see that they are started off properly to the rear, or follow them to the wards to see that they are taken care of there, if, for any reason, the cases are to remain. From the standpoint of the surgeon he is free when he has finished the operation. He steps to the next table and goes on with his operating. The organization which is now in use has resulted in a saving of from 30 to 50 per cent. of the output of the hospital.

In the war work, of course, you do not have a patient in one hospital any considerable length of time. At home we expect to keep a patient in a hospital until he is well. In war this is impossible. You have the man perhaps a day at this hospital: probably two days at

the next one; a day or two at the next, and so on, and the man may be in half a dozen before he gets to the base port to go home. It is absolutely necessary, you see, because of this, to decide upon methods or positions as well as splints, that will be used everywhere, in order to get the best results. If you do as was done in the beginning, put up the leg with a broken femur much flexed, and the order comes to evacuate the case the next day, you cannot evacuate him in that position; you have to pull it down. If you have had him up there three or four weeks and ossification or repair has started, and you pull that leg down, you damage the tissue, and delay in healing naturally results. After much study it was decided that certain positions were most favorable for transport, and that if the man was put in that position on the operating table in the evacuation hospital he could be easily handled and transported without disturbing the position of the bone. The positions which have been standardized are positions which will be pictured in the new splint manual, which will be a handbook on the treatment, as well as types, of splints.

You can put the man up in 30 degrees of flexion with a wound of the thigh, with traction, and in that position the man can be moved perfectly well. He can be moved in ambulance, he can be taken in a hospital train, or put on shipboard and sent home without once disturbing the position. In that way you shorten the period of recovery and once the splints are applied they are not disturbed, and the splints that are put on in the evacuation hospital are continued wherever the man goes, except that for the upper leg cases when you have the lacerated wounds around the buttock, the ring cannot be used. For those we use the Hodgen splint (Fig. 6), or the long Liston (Fig. 7).

The other type of splint (Cabot posterior wire splint. Fig. 8) for the leg is this one here (showing) which was designed for the lower leg and ankle injuries, and it can be used in connection with the Thomas splint if you wish.

Now, for the arm conditions, the principles are the same, and for transport in the field this (Fig. 9) is the splint that is used, similar to this one for the leg. It is on the same principle exactly. The Thomas splint has been adapted for the arm and the arm is put in here. With a splint like this on, a man found in the

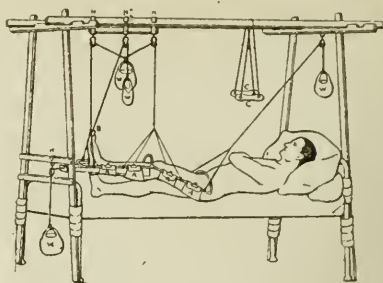


FIG. 6.—Hodgen splint suspended on Balkan frame.

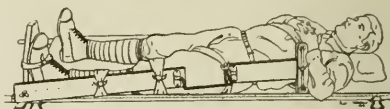


FIG. 7.—Long Liston splint applied for transport.

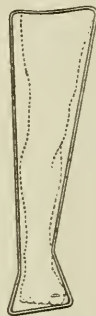


FIG. 8.—Cabot posterior splint.



FIG. 9.—Thomas arm splint applied for transport from field.

field having a smashed humerus can be handled, in the field in an ambulance, or on a train, with little, if any difficulty. In changing dressings the traction should not be disturbed. This is the hinged arm splint (showing) which we are now using entirely. At the beginning we had two types: one with a fixed ring and the other with a hinged ring, and in the new splint manual this will be the only one. We won't have a stiff ring for the arm at all. If you want, for instance, the arm fixed at the elbow, it is easy to bend to get the position. Every case in the field of arm injury would be brought in with this type of a splint

on. You wouldn't use that type of splint for an injury to the wrist, but this will meet everything above the wrist that you have to take care of in the field.

Now, when it comes to the question of treatment, it is desirable to have something that makes it possible to get traction on the humerus with the elbow flexed, with the fracture low down, in which so commonly the lower fragment drops backward and you want to get traction downward and forward on the arm. This (Fig. 10) is the type of splint that we use for

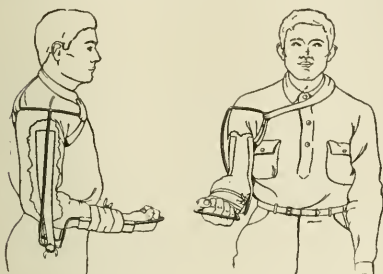


FIG. 10.—Jones humerus extension splint.

that. It is the Jones humerus traction splint, which works in this way (illustrating). With it fastened in this way you get the moderate pull that you want to draw the fragment into place and hold it there. It also gives you a chance to put the hand in a supinated position so that when it ultimately heals the lower part will be in normal relation to the upper instead of twisted inward, as it frequently is. This is the splint you see much used in the low humerus injuries.

A type of splint has been devised that is one of the most useful things that one can find and that is this wire ladder splint (Fig. 11) (show-

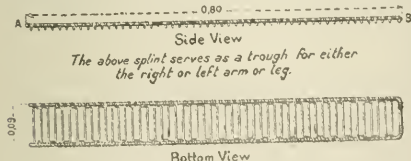


FIG. 11.—Wire ladder splint material.

ing), which is nothing but two pieces of steel with these cross wires soldered on to it. It hasn't been possible to supply them in the numbers required; the demand has been so

great. You can use it in a badly smashed thigh to get added support. You can put it on the side of a splint like this. The number of ways in which you can use it is infinite.

For the forearm there is nothing better than that type of splint. If you have a forearm badly injured, you many times need traction just as much as you need traction of the leg for the femur injuries. You can accomplish it perfectly well with this splint, and it will give the satisfactory supination. (You should never put a forearm in pronation position). With the splint bandaged to the upper arm, with your traction here, you practically have all that is needed. Then for the rest of the splints:

Where you want a support for a smashed hand this wire ladder splint (showing) can be bent double and you have an ideal splint. That has been supplied to our army in great numbers; thousands and thousands and thousands have been used in this way, and it is the most useful rough and ready thing that you can possibly have.

Now, there is one simple splint that is used for a large number of cases. This is the so-called Jones cock-up splint (Fig. 12). This is



FIG. 12.—Jones cock-up splint.

used in a great many cases of gunshot wounds. In these cases it becomes necessary to put the hand up in such a manner that the function of the member will be the best possible. It should be put up in the position most feasible for ultimate function. It leaves the fingers free and with the wrist dorsally extended. It is also a very good splint for musculospiral cases and for wrist drop, which is common from all these battle casualties.

Now, with this small group of splints that I have shown you here you have splints that will meet almost everything that is necessary for army work. To show how well they work, when it came to the question of transporting a large number of our seriously wounded to the States—the reason for sending them being that with the rapid expansion of the army there was difficulty in establishing hospitals fast enough to

take care of the wounded—it was necessary to try out a system of handling cases to see if we could get them home without harm to the men. At first it was thought impossible, but the military necessity made it necessary. When the first group of men were taken down to the ship and put aboard I went myself with the convoy to the ship. I went on board each ship and explained to each ship's surgeons the type of splints which the men in the convoy had, and demonstrated four splints—that's all—and I was able to say to them that the only thing they need learn would be four splints and that would cover everything we would send home.

What I have shown you now represents the splints that are standard in the United States Army. They will meet practically all needs, and it is quite obvious that these same things, which have shown such splendid results for the army, will be used in civil hospitals, so that it behooves all of us to learn how to use them. We are never going back to the Buck's extension and T splints for femur cases if we are to get the best results.

Care of Amputation Cases. Another responsibility which has been put upon the Division of Orthopedic Surgery is the care of the cases in which amputation of one or the other extremity has been necessary. It has been found that if these cases are handled rightly that their stay in the hospital is relatively short and that in from four to five weeks from the time of the amputation, the majority of the cases can be up and about, the leg cases walking about upon temporary artificial limbs. The chief matter of importance in these cases was to prevent unnecessary retraction of the stumps in healing and to prevent the contracture of the joint next above. This work has been carried on very largely over here under the direction of Major Philip D. Wilson, who has been assigned to the orthopedic division, and the men, upon their return to the States, will in proper time have the permanent legs fitted under the direction of the army organization.

Occupational Therapy. To give you an idea of how thorough the organization of the army is with reference to the ultimate function of the injured part with our men, the appreciation of the fact that use of the injured part up to the limit of toleration assists in healing and prevents harmful contractures has been constantly borne in mind, and a corps

of reconstruction aides has been created and curative workshops established. In the first place, while the patient is still lying in bed he is encouraged to use his hand or damaged part as much as possible and special occupations have been arranged to encourage such activity. Not only does this assist in the healing of the part locally, but the general mental attitude of the patient (a very important factor) is of course much improved and his restlessness, which otherwise would naturally be expected, is largely controlled. Even though the injured part may be of the lower leg, early occupations in which the hands alone are involved assist in the recovery, since when the man is fully occupied he is much less restless, there is much less unnecessary moving about in bed—with the natural improvement of the local part. When it is possible for the patients to be up and about, the curative shops are used for the same general reasons.

You will see from this that the organization of the Orthopedic Section of the Medical Corps of the Army has been planned largely to insure the most perfect restoration of function that it is possible to obtain with the wounded men, and this emphasis upon the function as the basis of the ultimate test or result must be carried into civil life the same as it has been insisted upon in the army organization.

These, in general, gentlemen, are the plans under which our Division has been operating and I cannot speak too strongly in compliment of the men who have done so much of the work or of the way in which the regular Medical Corps has supported us in our activities. Because of this work and knowing personally of the results as they are coming to the base ports, I have a very strong feeling that when we go home there will not be many of the wounded men whom we will see about of whom we will have reason to be ashamed, or who will be reflections upon the medical care received over here.

SUFFERING IN THE FAR EAST.—At a recent meeting of workers for the American Women's Hospitals, prior to opening a campaign for \$40,000 in this state, the sufferings of the people in devastated portions of France, Serbia, and Armenia were described by Dr. Barbara Hunt. An effort will be made through the country to raise \$250,000.

Original Article.

APPLIED ANTHROPOLOGY.

BY CAPT. C. L. LOWMAN, SAN FRANCISCO.

To most of us the term anthropology is usually associated with archeology and conveys little meaning except in reference to dead bones and prehistoric remains. Few of us ever recognize that it is a live subject and deals with matters of practical value to us as medical practitioners in our every day work. We presume, of course, that to professors of comparative anatomy in our colleges it would be a subject of value; but most of us will immediately think of the college museum when the term is mentioned. About the closest that most of us get to the subject is in taking the weight height, and occasionally girths in connection with physical examinations or for vital statistics. A little more exact application of anthropometry is in use to a greater or less extent in the physical educational departments of our high schools and colleges, but I am sorry to say that in many of them the information recorded has not been translated into action designed to meet or correct physical needs demonstrated by the examinations.

We all of us use, every day in our practice, isolated anthropologic facts, but we are apt to lay most of the stress on symptoms, pathology, and therapy. It is only when we have some very obvious symptoms which we recognize as occurring usually in certain types; for example, in some endocrine disturbances, or in enteroptosis, which we know is usually found in types with relaxed backs, that we give any consideration to facts referring to types of body or variations from some vague norm which lurks in the dimmer recesses of our thinking. Very comprehensive and valuable data will be obtained if, in beginning our examinations of patients, we approach the matter primarily, not with symptoms or pathology in mind, but with the idea of noting the general type, then the smaller variations peculiar to the type. We should not prejudice our opinion or conclusion in advance even when there is a perfectly obvious pathologic fact staring us in the face. For instance, a case of obvious Pott's disease may present itself for examination; we should not just look at the case, diagnose tuberculosis of the spine and recommend treatment for that

condition only. If we would temporarily forget the obvious lesion, and note that the individual is of the thin flat-chested type, and would be apt to have other postural defects, we would strip the patient and record the exact anthropologic findings—noting faulty body mechanics which are usually in accordance with the type. Or take another illustration—that of pulmonary tuberculosis. Our first observation, plus a few sentences in the history, make us suspicious at once, and the patient is stripped to the waist, lungs examined, and treatment for pulmonary tuberculosis outlined. If we had gone a little further and momentarily disregarded the essential diagnosis, we should have correlated in our mind that most tubercular individuals have other conditions which cause disturbances of function. Consequently, on having the patient stand, wholly stripped, we might note more or less abnormal spinal and pelvic alignment, some knock-knee and flat or weak feet. Now, if it is important to attend to the correction of these static deviations in otherwise normal individuals on a basis of relieving their strain and increasing their efficiency, how much more essential is it to do so in the case mentioned. Yet the fact is that seldom are all these disturbing elements considered, the pathologic process only being treated. As rest and conservation of nerve force are vital in the treatment of tubercular cases, is it wise to allow a woman with pulmonary tuberculosis and weak feet, to continue to walk around on a narrow-heeled shoe and wearing an improper corset?

For purposes of quick observation, a very rough classification is sufficiently practical for everyday use in the general sizing up of patients.

1. The slender, lythe type.
2. The short, wide, stout type.
3. The intermediate type.

In the latter class fall the medium, or what we actually think of as the average normal. As has been pointed out by several writers, especially Goldthwait, certain physical findings are met with in each group, *i.e.*, the temperamentally nervous, high strung individuals are usually in class 1. They are quite apt to be neurotic, likely to be over ambitious, and to try to carry a 40 h.p. load with a 10 h.p. body. They usually have static deviations of one kind or another. Long backs are apt to be weak backs; long nar-

row, low arched feet are potentially weak feet. The long flat chest which we know as phthisical occurs in this type, and as the name implies, it predisposes to tuberculosis. The usual relaxed posture predisposes to visceroptosis, which in adults is a marked factor in functional disturbances of many kinds. Similarly, those of the short type are apt to be phlegmatic, slow moving, and sluggish; are apt to develop obesity; oxidize slowly; are hypo-thyroidal, with skin perhaps dry, fingers stubby, hands squared, etc. Posturally, they may have droop shoulders, hollow backs, knock knees, pronated and weak feet and, later on depressed arches. Still later they are prone to develop such joint conditions as hypertrophied synovial linings with fatty fringes and villous arthritis; varicose veins and poor circulation in the extremities; pendulous breasts and abdomen; toxæmias due to intestinal stasis, and neuritic disturbances. Those of the middle type, who are more apt to be nearer our ideal normal, are not the ones who make up the general run of the practitioner's cases. They seek medical relief only for injuries, acute infections, and such conditions. It is in the other two groups that most chronic ailments are developed and they make up by far the greater number who have lowered physical efficiency of so-called functional disturbances.

Now if the correlation of these facts is borne in mind, it can readily be seen that more comprehensive and valuable examinations will be made and the appreciation and correction of elements of faulty bodily alignment will be the means of curing or improving a high percentage of the functional disturbances. Those potential weaknesses that reduce efficiency and waste the vital energy, which is so much needed to combat pathological processes, must be taken into consideration if the highest degree of good results is to be obtained. In other words, skeletal faults must be noted and corrected in all cases, both functional and pathological, or results will not be as highly satisfactory as they should be. When we come to realize that attention to postural faults in the adult is productive of much good and that certain types are more prone than others to have potential weaknesses, we will pay closer attention to these facts in relation to the growing generation.

One of the most instructive lessons of this great war is that the number of recruits rejected for physical defects has been very large,

and that a great percentage even of those accepted have filled up development battalions and convalescent detachments. In the course of time these numbers and percentages will be known and this information should be thoughtfully weighed and our future policy modified by it. Our schools and colleges must change their policies in regard to their physical educational methods. More corrective elements must be introduced; in fact special departments for handling corrective posture work must be established. Heretofore this work has been left almost entirely in the hands of educators and physical directors who have not had the proper coöperation or supervision of the medical fraternity, and consequently this phase of the situation has not been deeply appreciated or fully enough developed. The appreciation by the physician and surgeon of the relation of postural faults to the physical deficiencies and ills of adult life will open the way to one of the greatest applications of preventive measures that has ever taken place. I do not think it is too visionary a thing to suggest that with the establishment of some form of universal physical training, or universal military training, the government anthropological service could readily be expanded and universal physical examinations of all children be made by it. Such records, preserved, would be invaluable during the life of that individual.

The work already accomplished in connection with the recent national baby saving campaigns demonstrates how this sort of thing could be done. With reasonably simple and easily understood charts, and an organization developed from the nucleus of trained workers already in government service, the task would be no more difficult than the baby saving campaign already mentioned. Speed or time would not be so essential as to necessitate making the examinations at the same time for all the children. Any time during the first two years after the child enters the grade school would be satisfactory. This need not in any limited sense be a medical examination, but a purely physical one, and being a government survey, it would be impersonal and ought not to be objectionable to any large group of citizens.

Many points worked out in the recent examinations of large groups of men for army service would be helpful for this general examination of school children. Triplicate records

would be of value, one for the government, one for the school, and one for the parents. The most important data should be strictly anthropologic; especially the measurements of leg and body lengths, the few important girths, type of chest and back, foot conditions in reference to weight bearing, and the notation of potential weak points and such static faults as are already manifest. Other important data, such as condition of eyes, ears, nose and throat, teeth, etc., should also be registered. The question of mental testing and examination might also be undertaken, but would not be essential from the standpoint of anthropometry.

This could serve as a proper guide in the growth and development work throughout the school life. It would be of very great value to any physician or surgeon handling a given case, as a matter of reference. It would aid in straightening out many a medico-legal tangle involved in accident compensation cases. Going back to an early government record would be of great value in establishing facts regarding physical conditions. Its chief value would be in its aid to the early establishment of corrective prophylactic therapy.

We should make the best possible use of the lessons learned during the past four years and there is none more evident than the necessity of increasing to the highest possible point the strength and efficiency of the coming generation. We shall undoubtedly advance to a more prosperous and intensive stage of progress, necessitating greater exactions on the strength and nerve power of the nation—and how better can we prepare to meet such an advance than by taking stock of the physical condition of the children of today? The medical profession should be among those most interested in this matter, because by training and inclination they stand for advance in all preventive measures. With this in view, greater importance must be attached to the study and teaching of those facts of anthropology which will enable our medical students to recognize that deviations of skeletal alignment, as well as organic malfunction, ultimately result in symptoms, and that the time to treat such deviations of alignment is in their incipency, which occurs in early childhood.

American Medical Biographies.

DAVIS, NATHAN SMITH (1817-1904).*

Untiring, irrepressible, uncompromising and incorruptible, Nathan Smith Davis occupied for half a century a shining place in the foremost rank of the medical profession of the United States. He was father of the American Medical Association and author of a History of Medical Education and Institutions of the United States (1851). In Chicago, which became his adopted home in 1849, he soon distanced all rivals in the race for fame, popularity and material success.

He was born in Greene, Chenango County, New York, January 9, 1817. His parents, Dow Davis and Eleanor (Smith) Davis, were pioneers and the first 16 years of his life were spent on a farm. From early childhood he was spare of habit, his apparently frail body being dominated by an unusually active and tireless mind. His forehead was high and broad, and his head, which seemed too large for his body, gave external evidence of his chief characteristic, an intense and dominating intellectuality. His intellectual superiority first manifested itself in his work at the village school and led his father to give him the advantages of a higher course of study at Cazenovia Seminary in Madison County. He began the study of medicine in the office of Dr. Daniel Clark of Smithville Flats, and continued it in the office of Dr. Thomas Jackson of Binghamton until he graduated, in 1837, from the College of Physicians of Western New York at Fairfield, before he was 21 years of age. His thesis on "Animal Temperature" was selected by the faculty to be read at the annual Commencement exercises.

Dr. Davis practised in Vienna, N. Y., 1837-1838, and in Binghamton from 1838 to 1847. In 1838 he married Anna Maria Parker of Vienna, N. Y., by whom he had three children, a daughter and two sons. Both of the sons became physicians. The elder, Dr. Frank Davis, showed promise but died of miliary abscess of the kidneys after about ten years of practice. The younger son, Dr. N. S. Davis, 2nd, was associated with his father in practice and teaching, and, later, succeeded him in the Northwestern University Medical School. A grandson, Dr. N. S. Davis, 3rd, is already well started in a successful career.

At Binghamton he soon became prominent in

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

medical matters. He was secretary of the Broome County Medical Society from 1841 to 1843; librarian, from 1843 to 1847; and member of the board of censors for several years. From 1843 to 1846 he represented the county society in the New York State Society. He offered resolutions at the State Society in 1843 calling for a lengthening and grading of the medical course of instruction. The discussions of these resolutions led to the calling of a national medical convention in New York in 1846, which was the beginning of the American Medical Association. The acquaintance he formed during the time of his activities in the state medical society and in the organization of the American Medical Society and in the organization of the American Association led him to move to New York City in 1847. Here he took charge of the dissecting room of the College of Physicians and Surgeons, lectured on medical jurisprudence in the spring course, and took editorial charge of the *Annalist*, a semi-monthly medical journal.

In 1849 he moved to Chicago to accept the professorship of physiology and general pathology in Rush Medical College. In 1850, he was elected to the chair of principles and practice of medicine and of clinical medicine. Mercy Hospital, which was opened to the public through his invitation, was the first public hospital in Chicago. In 1851, the Sisters of Mercy took charge of it and have controlled it since, in affiliation with the Northwestern University.

In 1859, he and a few other Rush College professors founded the Medical Department of Lind University. Upon the extinction of that college, they founded, in 1863, the Chicago Medical College, of which he was professor of principles and practice of medicine, and later *emeritus* professor, until his death. He was dean of the faculty until he ceased active work in the college. Here his pioneer ideas about systematic medical instruction were carried out, and Chicago Medical College became the first medical college to adopt a three years' graded course. In the 70's, and mainly through his efforts, the college became the medical department of the Northwestern University.

Dr. Davis was one of those who organized the Illinois Medical Society and the Chicago Medical Society. He was also one of the founders of the Northwestern University, the Chicago Academy of Sciences, the Chicago Historical Society, the Illinois State Microscopical Society,

the Union College of Law, and the Washington Home. He was an honorary member of many medical and scientific societies in this and foreign countries, and was honored by most of the societies to which he belonged by election to official positions.

His ability shone brightest, perhaps, as a writer and orator. Besides having edited the *Annalist* at New York, he was editor of the *Chicago Medical Journal* from 1855 to 1859. In 1860, he founded the *Chicago Medical Examiner* and edited it until it became merged with the *Chicago Medical Journal*, in 1873. He was the editor of the *Journal of the American Medical Association* from its establishment, in 1883, until he resigned, in 1889. At different times he was also editor of the *Northwestern Medical and Surgical Journal*, of the *Eclectic Journal of Education and Literary Review*, of the *American Medical Temperance Quarterly*. He wrote a textbook entitled, "Lectures on the Principles and Practice of Medicine," 1884; second edition, 1887, Chicago; a "Textbook on Agricultural Chemistry," New York, 1848, for which he received a prize from the New York State Agricultural Society; a "History of Medical Education," Chicago, 1855; "Clinical Lectures on Various Important Diseases" (two editions), edited by his son, Frank H. Davis, and many monographs upon medical subjects, of which those on alcohol, temperance and medical education attracted most attention.

As an orator, he excelled, and he made good use of his oratorical ability. Temperance was one of his favorite topics, and he lectured frequently on subjects connected with hygiene and popular science. As a medical lecturer he had few equals in his day. His exposition of a subject in the classroom was clear and systematic, and but few of his students began practice without knowing how to use the Davis treatment in successful competition with their rivals. But it was when giving advice to his students and discoursing upon their duties and opportunities, and revealing to them the ideals of conduct and achievement which they saw carried out so faithfully in him, that he became eloquent and inspiring. As his student, the writer does not remember so much what he said about achievement, as how he made him feel about it. The words are gone but their influence remains. Our knowledge was acquired from all of our professors, but our inspiration came from him.

Dr. Davis died June 16, 1904, at the ripe age

of 87 years, and is remembered as one of the greatest and most influential Chicagoans of his time. He was ever active as a leader and promoter of reforms and improvements in public and private life. He was a family physician in the old and best sense of the term. Although he had a large consultation practice he never refused to visit the poor, and never made his charges out of proportion to their means. His capacity for work was extraordinary. His private practice and consultation work were enough to monopolize the energies of an ordinary man; his college and hospital and medical organization work were enough for another; while his editorial duties, his medical writings and scattered work on temperance and other public reforms would be considered sufficient to take up the time of still another. Probably no man ever made better use of his evenings and nights than he. Every moment not utilized in sleep was utilized in work. Such was his devotion to his work and so ardent his desire to accomplish his ideals that he could not bear to think of amusements and vacations. Different kinds of work constituted all of the change he required. He was glad to get home at night from the cares of his practice to the peace of his editorial or other literary work, and in the morning he was glad to see his patients again. The world is changing. This type of man is becoming a rarity. What have we to make up for it? It is good for us to preserve the records of such lives that we may compare notes and have a standard for self-criticism in these days that are so different.

HENRY T. BYFORD, M.D.

THACHER, JAMES (1754-1844).*

STANDING at the head of the list of medical historical writers in this country is the name of James Thacher, son of John Thacher of Barnstable and of a daughter of a Mr. Norton of Martha's Vineyard, Massachusetts. James was born at Barnstable, February 14, 1754. As soon as he had obtained a common school education he studied medicine with Dr. Abner Hersey of Barnstable and then, aroused to enthusiasm by the opening events of the American Rev-

olution, he went up for examination as surgeon's mate in the army, passed high in his tests, and obtaining his appointment, served under Dr. John Warren at various small hospitals in Cambridge for a year. He was then promoted to the position of surgeon in the army, and during the succeeding seven years traversed the colonies from Castine, Maine, to Yorktown, in Virginia; next, at the head of a band of sharpshooters; once on the ill-fated Penobscot expedition; then in charge of a chain of hospitals containing altogether 500 beds; and, finally, he was present at the surrender at Yorktown. During that time he obtained wide experience in medicine and in military surgery. Retiring from the army January 1, 1783, he settled in Plymouth, Massachusetts, married, in the following year, Susannah Hayward of Bridgewater, near at hand, and to the very end of his long life continued active in practice or in medico-literary labors. In childhood he had acquired a slight deafness, which gradually increased with age; yet, in spite of the burden and a distressing tinnitus, he labored cheerfully to the end, devoting his declining years to the preservation of everything connected with the Pilgrim Fathers, and nothing pleased him more than to act as a guide to strangers in Plymouth, every historic character and mansion of which he knew by heart. There he died, May 24, 1844, when in his ninety-first year.

Dr. Thacher was a voluminous writer, beginning as early as 1802, when he contributed a paper on the art of making marine salt from sea water to the American Academy of Arts and Sciences. His "American New Dispensatory" appeared in 1830, a fourth edition in 1821, and "Modern Practice of Physic" in 1817, followed by a second edition in 1821. Next year came a charming book, "The American Orchardist," in which he not only showed how to grow fine apples, pears, plums, and grapes, but gave space to the manufacture of cider and wine from apples and currants. A most interesting book was his "Military Journal during the American Revolutionary War," (1853), written day by day for nearly eight years. Amongst the many noteworthy episodes in this splendid volume are the visit of Washington to the hospital of which Dr. Thacher had charge, his accounts of the personality of our national hero at the bedside of the wounded, on horseback, or standing amidst his staff, or at a dinner given by General and Mrs. Washington, to

* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

which Thacher was invited as a particular guest. Then we pass to a word picture of the capture and execution of Major André, the pathetic scene of the court-martial of mutineers in the midst of the depths of winter; that silver bullet swallowed by a spy, with its incriminating letters inside, brought back to the world by Thacher's dose of tartar emetic, and personal meetings with Lafayette, who was his patient for a while. The end of this famous book is enriched with unexcelled lives of Lafayette, Steuben, and other men of army fame during the Revolution.

Although Dr. Thacher wrote many papers for the medical journals of his era, on such topics as "Hydrophobia" and "Medical Plants" his *magnum opus* is the "American Medical Biography," published as two volumes in one, in 1828. This is made up of 163 biographies in 716 octavo pages with 14 delightful portraits of the eminent physicians of his time and of the past, introduced with a very readable history of medicine in America. In his preface he says: "Materials for this work have been so abundantly accumulated that the author has been obliged to suppress some memoirs, and to retrench others, lest the volume should be augmented to unwieldily size . . ." This work remains the fountain head of American medical biography and a perpetual monument to the fame of James Thacher. Not only does it reveal the writer's knowledge of the character and works of the leaders in medicine, but it proves his wide friendship with his contemporaries, for he received assistance from a large number of the prominent men of the day, notably Hosack and Francis of New York, Mease of Philadelphia, Thomas Miner and S. B. Woodward of Connecticut, and G. C. Shattuck of Boston.

Other works of Dr. Thacher were a "Practical Treatise on the Management of Bees," (1829); "Essay on Demonology, Ghosts, Apparitions and Popular Superstitions," (1831); and a "History of Plymouth," (1832).

In writing even a brief notice of this once well-remembered physician we should not forget to point out that he stood so well as a teacher in medicine that he was invited, but declined, to lecture on the theory and practice of medicine at the Fairfield Medical School in 1813, when Dr. G. C. Shattuck resigned, owing to difficulties of winter travel. Thacher was one of those men who love to write letters, and those of his that have been preserved only cause re-

gret that more were not saved, exhaling as they do the charming personal traits of the writer. He believed in medicine, laughed at little doses, favored phlebotomy, at least in desperate pneumonia, and gave much time to botany and its development for the uses of medicine. Harvard conferred on him her A.M., in 1808, and in 1810 both Harvard and Dartmouth gave him their honorary M. D.'s.

To sum up in a few words the full life of this able physician it should be said that, in spite of the misfortune of deafness, which long debarred him from a satisfactory speaking acquaintance with people around him, he studied assiduously for the benefit of his patients and posterity, and in his published works he has left a name that will endure so long as American medicine has a history.

JAMES A. SPALDING, M.D.

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WARREN, JONATHAN MASON (1811-1867)*

Jonathan Mason Warren was born in Boston on February 5, 1811, in the house No. 2 Park Street, then occupied by his parents, and died there on August 19, 1867.

He was the second son of Dr. John Collins Warren and grandson of Dr. John Warren. In 1820 he entered the Boston Latin School, and remaining there through the full term, graduated with his class in 1825. After studying two years with a private tutor he entered and was admitted to the Sophomore class of Harvard in 1827. At the end of three months, owing to ill health, he was obliged to leave college. He retained, however, his associations with the class of 1830, and in 1844 received the degree of A.M. from Harvard and in 1849 became a member of the Phi Beta Kappa Society. Invalidism due to dyspepsia brought on probably by too close an adherence to the system of the day of much and exacting attendance at school exercises which left but little time for hygienic recreation, prevented him from continuing his studies at Harvard. After a trip to Cuba in search of health, in the spring of 1828 he returned to begin his medical

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studies under the tutelage of his father. The old homestead had been the resort of medical students who served an apprenticeship, after the custom of the time. The class occupied a room with sanded floor near the entrance, for the purpose of study and took their meals under the same roof; a custom dating from the period when the Medical School was still at Cambridge and probably at the time in question gradually yielding to a more modern system. In the fall of 1830 he entered his name as a student at the Medical School on Mason street, from which he graduated in 1832, at the age of twenty-one.

In March, 1832, Dr. Warren sailed from Boston for Europe, the ship "Dover" shaping its course first to Charleston, S. C. He reached Liverpool at the end of May where he found an epidemic of cholera in progress, which visited Europe that year. After visiting the clinics of Astley Cooper and Charles Bell in London and Syme and Liston in Edinburgh, he arrived in Paris in the fall of that year. Here he studied surgery under Dupuytren, Lisfranc and Roux and medicine under Louis. Among his fellow-students may be mentioned the names of Jackson, Bowditch, Holmes, Bethune, Hooper and Inches of Boston, and Gerhard, Pease and Pepper of Philadelphia, forming a group of prominent Americans afterwards known as the "pupils of Louis." After two winters of study in Paris he visited, in the spring of 1844, Dublin, where Kennedy was master of the lying-in hospital and Macartney was presiding over his interesting museum at Trinity College. The winter of '34-35 was passed in Paris, where he saw Dieffenbach, on a visit from Vienna, perform his rhino-plastic operations. He also learned from Roux his method of operating for cleft palate, an ailment with which his own name was destined later to be intimately associated. He returned home in June, 1835, prepared to begin his professional career.

On the departure of his father for a visit to Europe in 1837 a large practice was entrusted to his care. In this he was eminently successful and became prominent, both as a medical, and later, as a surgical practitioner. He was well qualified for these duties not only by personal traits but by sound education backed by good judgment.

In 1843 he published his first article on staphylorrhaphy* an operation in which he was

the pioneer in this country, the method which he devised being substantially that which is employed today. A full account of this operation is given in his book, "Surgical Observations and Cases," published in 1867, in which he refers to one hundred operations for fissure of the soft and hard palate performed by him.

On April 30, 1839, he married Anna Caspar, daughter of Benjamin Williams Crowninshield, Congressman, and at one time secretary of the navy under Madison.

In February, 1846, he was elected one of the visiting surgeons of the Massachusetts General Hospital and on October 16 of the same year he assisted his father in the operation at this hospital, which was destined to be known as the first public demonstration of surgical anesthesia. A few weeks later he substituted for Morton's apparatus the cone-shaped sponge which was used for the purpose of administering ether at the hospitals for twenty years.

On the sixth of May, 1853, while returning from a meeting of the American Medical Association in New York, he was a passenger on the train which met with the so called "Norwalk accident" in which the cars went at full speed through an open draw into the river. Several members of the Association were on the same train and Dr. Peirson of Salem was killed. Dr. Warren superintended the resuscitation of one of the first victims removed from the water, artificial respiration being kept up for two hours.

Dr. Warren's health, never robust, seems to have permanently suffered from the shock of the experience and necessitated two visits to Europe in the following years. In 1864 he delivered the annual address before the Massachusetts Medical Society on "Recent Progress in Surgery," which summarizes well the status of surgery immediately preceding the antiseptic era.

He was senior surgeon of the hospital for several years preceding his death in 1867. He was survived by his wife and four daughters and a son, Dr. John Collins Warren.

Dr. Warren was a man of delicate frame and of refined and distinguished bearing. He combined a cheerful disposition with qualities of mind and heart which made him popular with patients and friends alike who flocked in large numbers to pay him a final tribute.

J. COLLINS WARREN, M.D.

* New England Quarterly Journal of Medicine and Surgery, April, 1843.

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LEAGUE OF RED CROSS SOCIETIES.

A LEAGUE of Red Cross Societies has been formed for the purpose of making a unified and systematic effort to anticipate, diminish, and relieve misery produced by disease and disaster. This league has been founded by Red Cross societies of the United States, Great Britain, France, Italy, and Japan, subsequent to the conference of Red Cross leaders and medical experts which has been in session in Paris and Cannes for the past five months. The following statement defining the object and purpose of the League has been issued by the American Red Cross.

The objects of the League as formally set forth in its Articles of Association are: 1. To encourage and promote in every country in the world a duly authorized voluntary National Red Cross organization, having as purposes the im-

provement of health, prevention of disease, and mitigation of suffering throughout the world, and to secure the coöperation of such organizations for these purposes. 2. To promote the welfare of mankind by furnishing a medium for bringing within reach of all peoples the benefits to be derived from present known facts, and new contributions to science, and medical knowledge and their application. 3. To furnish a medium for coördinating relief work in cases of great national or international disasters.

The original members of the league are to invite the Red Cross societies of other nations to join, each organization to preserve its national autonomy and all to remain constituent members of the International Red Cross of Geneva. The control of the League will be by general council, composed of representatives of all members of Red Cross societies meeting at designated periods. A governing board of fifteen members will be chosen by the general council to direct the affairs of the League in the intervals between such meetings. Henry P. Davison of New York, formerly chairman of the War Council of the American Red Cross and since January chairman of the Committee of Red Cross Societies which formulated the League's program, is chairman of the League's first Board of Governors. Other members of the board chosen thus far are: Sir Arthur Stanley of the British Red Cross, Comte Kergorlay of the French Red Cross, Count Frascara of the Italian Red Cross and Professor Ninagawa of the Japanese Red Cross. The board selected Geneva as the headquarters of the League and took steps toward putting into practical effect the world health program shaped during the recent conference at Cannes.

The purposes of the League of Red Cross Societies are recognized by the League of Nations in article No. 25 of the latter organization's covenant, which reads: "The members of the League agree to encourage and promote the establishment and coöperation of duly authorized voluntary National Red Cross organizations, having as purposes the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world."

While it is expected that the League of Red Cross Societies will establish intimate relations with the League of Nations, it should be understood clearly that the former, being a purely voluntary, non-political, non-sectarian, non-governmental organization, has no statutory connec-

tion with the League of Nations or with any government.

Mr. Davison, commenting on the League of Red Cross Societies, said:

"The Red Cross Societies of the United States, Great Britain, France, Italy, and Japan have for several months worked incessantly, through their representatives, to devise an agency which could adequately cope with the world problems of disease and disaster. From the outset it was clear to us all there was no institution in the world so well adapted to this task as the Red Cross because of the peculiar hold which it has upon the hearts of all peoples, irrespective of differences of race and religion; because of its fifty years of honorable service in all quarters of the globe; because of the amazing development of its powers in the recent war; because of the anxiety of its membership not to lose the opportunity for service when war service was no longer needed; because, in short, of consensus of opinion, medical and lay, that health problems of the world can never be solved by doctors alone, nor by governments alone, but must enlist hearty volunteer coöperation of the peoples themselves; and no organization can mobilize the peoples of divergent views as can the Red Cross. Recognizing this phenomenon, the five largest Red Cross societies have banded themselves together to bring about Red Cross coöperation everywhere.

"For a practical starting point, we have the well concerted recommendations of one of the most remarkable medical assemblies that ever applied itself to a set of practical problems. The League which has been created will extend to Red Cross societies throughout the world and we hope will in time be universal in membership. The spirit of the founder members of the League; the practical form of organization determined upon; the close ties established between the League and the International Committee of the Red Cross of Geneva, each complementing the work of the other; the interest and active coöperation already evidenced by government heads everywhere and so well expressed in the recent draft of the League of Nations covenant, the love of all peoples for their Red Cross societies, and the compelling need throughout the world, all combine to give assurance that this League of Red Cross Societies will quickly become that great agency for the people's welfare which the founders determined it should be."

OCCUPATIONAL AND INDUSTRIAL THERAPY FOR THE INSANE.

THE extension and improvement of occupational and industrial therapy in the treatment of the insane should receive more adequate attention. A pamphlet by L. Vernon Briggs, M.D., reviews the research work in this field which has been reported in medical literature, and surveys the occupational work being done in our schools and hospitals at the present time. It is interesting to observe the policy adopted toward the insane in the middle of the nineteenth century, as compared with the attitude which is taken toward this class of sufferers today. Then, such methods as the straight-waistcoat, the tranquillizing chair, the deprivation of customary pleasant food, and "the pouring of cold water under the coat so that it descended to the armpits" were some of the methods to which physicians resorted.

One physician of this time, however, disagreed with these modes of coercion and advocated bodily labor as one of the measures necessary for the moral treatment of the insane. Dr. Amariah Brigham, superintendent of the Utica Asylum, recommended that workshops where dressmaking, tailoring, basket-making and other industries could be taught should be connected with institutions. For some patients, he believed that mental training would be beneficial, and that reading, drawing, music, arithmetic, natural sciences, and other studies could be taught with good results. In 1847, he advanced his theories against the prevailing views on coercive treatment of the insane, saying that he believed that employment in order to benefit the patient should be for its own sake and separated from the idea of gain. He organized an asylum school, and introduced a great variety of occupational instruction; he established a whittling shop, a printing office, and other industries in connection with his institution. These schools were a part of the hospital routine.

The author of this pamphlet believes it probable that except for the addition of gymnastics and dancing, and the development of the more strictly artistic handicrafts, little has been devised in any state hospitals in this country since Dr. Brigham's day for the diversion and occupation of patients. Would it not be advantageous, perhaps, to put these matters, still under

medical direction, into the hands of educators trained in the knowledge of occupational therapeutics? Compared with the progress which has been made in the fields of therapeutic occupation for the blind, the crippled, and other handicapped individuals, therapeutic occupation for the mentally ill has not received the impetus which it should have received. A comparison of statistics covering the work of a purely therapeutic nature shows little increase in the past two years. Although ward and farm work has increased, this is probably due to economic reasons rather than therapeutic application of this work to individual needs.

In order to make it possible to have all the patients working, an adequate hospital force is one of the first requisites. In addition to expert teachers, a corps of instructors among the nurses, who had taken a course in therapeutic occupation in the training school, would be of valuable assistance in studying the needs of patients. A careful study made last year by the Massachusetts State Board of Insanity of the working capacities of the State institutions under their care shows that they had on June 1, 1916, a total of 17,683 patients, and that the working capacities of the institutions could have provided employment of some sort for 92.54 per cent. of the patients. On that date, 72.66 per cent. of all patients were reported as occupied. Of these, only 3.03 per cent. were occupied in shops and 8.94 in industrial rooms, making a total of 11.97 per cent. of the patients in scientifically directed branches of occupation under special trained teachers. Many of these patients work but a small part of the day.

The importance of occupational therapy is recognized, and a more thorough, systematic organization of occupational and industrial work and educational instruction would benefit the patients and contribute valuable material to scientific research.

PUBLIC HEALTH SERVICE AND VENEREAL DISEASE CONTROL.

It is probable that few outside of the medical profession knew of the wide distribution of venereal diseases before our entrance into the world war. When, however, the examination of recruits from all over the country made it

possible to collect data, the problem was found to be so great that concerted action on the part of all the citizens of the United States was called for. In order to make this possible, the Public Health Service cooperated with the State boards of health in establishing for the control of these diseases an organized campaign, with four principal objects in view.

First of all, it was considered necessary to secure the reporting of venereal infections in accordance with State laws or State boards of health regulations; second, that repressive measures be carried on, with isolation and treatment of infected persons in detention hospitals; third, that free clinics be established with proper facilities for early diagnosis and treatment of venereal diseases; and fourth, that a general educational plan be conducted to inform the public as well as infected individuals regarding the nature of these diseases and the way in which they are spread.

By the passing of the Chamberlain-Kahn bill, there was created on July 9, 1918, an Interdepartmental Social Hygiene Board and a Division of Venereal Disease in the United States Public Health Service. Among other things, this act provides for the allotment to State boards of health of one million dollars each year for two fiscal years, for use in controlling venereal diseases. In order that the various States might be entitled to receive this sum, it was stipulated that they must agree to require the reporting of all venereal diseases, to the assignment of an officer of the Public Health Service to the State to cooperate with the State health officer, to make available local or legislative funds, to extend educational measures, to secure additional legislation necessary for developing the control of the spread of venereal infections, and to expend the State allotment along general standard lines in accordance with a system to be advocated by the Interdepartmental Social Hygiene Board. The payment of the allotment for the year beginning July 1, 1919, is conditioned upon the expenditure of a like amount by the State. It is interesting to note that eighteen States have already had the necessary laws passed.

A recent Public Health Report describes the duties and policy of the Division of Venereal Disease. It is specified by law that this department study and investigate the cause, treatment, and method of prevention of venereal dis-

eases, coöperate with State boards of health in carrying on measures to prevent the spread of venereal infections, and promulgate and enforce interstate quarantine regulations governing the travel of venereally infected persons. It is gratifying to observe that in carrying out this program, the Public Health Service has been admirably supported. Druggists pledged themselves not only to discontinue the sale of venereal disease nostrums and to refuse to prescribe remedies for self-treatment, but also to distribute to sufferers circulars advising them to seek competent professional service; the response of the medical profession in reporting cases of venereal disease has been prompt; and the people as a whole have demonstrated their willingness to support the campaign against venereal diseases.

YEAST AS A FOOD FOR MAN AND THE GROWING ORGANISM.

ATTENTION has been called to the value of yeast as a food for man and the growing organism by two articles which have been reprinted from the *American Journal of Physiology*. One considers the food properties of bakers' yeast as a source of food protein. The Germans were the first to make a comprehensive study of the nutritive possibilities of the yeast plant. Reported investigations have shown that such important amino acids as the following have been found to be present: glycocoll, alanine, valine, leucine, phenylalanine, tyrosine, proline, aspartic acid, glutamic acid, tryptophan, lysine, arginine, and histidine.

Some investigators report that from their studies it is apparent that dried yeast has at least three times the calorific value of beef of moderate fat content; that it may be readily digested and utilized by the animal organism; and that yeast diet can produce an average daily gain of about 0.4 gram of nitrogen per man. Baking tests have demonstrated that even when flour is replaced by dry yeast to as high as twenty per cent., loaves of pleasant flavor can be made. Other experiments show that in adding yeast to meat preparations, twenty-five per cent. of the meat protein can be replaced by yeast protein without making the mixture unpalatable. It is probable that from ten to thirty per cent. of the nitrogen of an ordinary

mixed diet may be replaced by yeast nitrogen in the form of compressed yeast without detriment to the best nutritive interests of the individual.

Experiments with compressed yeast on animals indicate the value of this substance as food for the growing organism. Thirty-two white rats, divided into four groups, were fed by four different diets: meat diet, casein diet, meat and yeast diet, and casein and yeast diet. The results of this study showed that the addition of compressed yeast to a diet lacking the water-soluble vitamins caused an immediate and pronounced increase in body weight. This increase was found to be more rapid and greater when the diet contained casein than when the protein of the diet was furnished by lean meat. Compressed yeast can be heated to 105°C. without losing its growth promoting properties. These observations may prove to be of practical value to physicians.

MEDICAL NOTES.

REVIEW OF THE INFLUENZA EPIDEMIC.—It is interesting to review the epidemic of influenza in Boston as outlined in the *Monthly Bulletin* of the Health Department of Boston covering the months of October, November, and December. Probably the climax in the daily incidence of new cases was reached about the first of October; during the week ending October 5, there was a total of 1,214 deaths attributed either to influenza or to pneumonia. This total had fallen to six hundred by the third week in October, and to forty-seven by the week ending November 5. A week later, the number of cases appeared to increase, but subsided, until about the first of December influenza suddenly became more prevalent until a climax of a severe recrudescence was reached about December 31. It is significant to note that the November outbreak occurred three days after the Peace Day celebration; the December epidemic manifested itself after the Thanksgiving gatherings; and during the Christmas shopping periods, the number of cases increased rapidly.

As influenza was not made a reportable disease by the State Department of Health until October 4, after the climax of the first epidemic had been reached in Boston, it is probable that this fact, together with the demands upon

the time of physicians, may have resulted in a wider statistical discrepancy between the number of cases and deaths in Boston than in other cities which have profited by Boston's experience. During the December epidemic, however, the reporting was as prompt and complete as possible. Reported statistics show that during the year 1918, there were reported altogether 6,393 deaths from influenza and all forms of pneumonia in Boston. Of this number, 5,157 deaths occurred during the months of September, October, November, and December.

SOCIAL SERVICE DEPARTMENT OF THE MASSACHUSETTS GENERAL HOSPITAL.—The object of the Social Service Department of the Massachusetts General Hospital is to train its workers to know what the doctor wishes his patient to understand, to be able to phrase his directions in simple language, to gain the patient's confidence and encourage him, to make use of all the sanatoria, convalescent homes, vacation funds, employment and charitable agencies, and to teach good hygienic habits. The thirteenth annual report describes the work which has been accomplished during the year.

A total of 597 patients have been treated in the medical clinics for tuberculosis, debility, cardiac, thyroid, nephritis, diabetes, gynecological, and gastro-intestinal disturbances. In the surgical clinics, there have been 80 patients, in the throat clinic 11, in the genito-urinary clinic 42, in the skin clinic 42, in the nerve clinic 238. The children's clinic has cared for a total number of 409 patients, the infantile paralysis clinic 137, and the genito-urinary clinic 47. Tuberculosis has been the greatest problem with which the department has had to deal. The work in following up a total number of 3,861 syphilis patients treated at the South Medical Clinic has been of great value not only to the individuals, but also to the communities in which they live.

In addition to its service in time of peace, the Social Service Department has assumed the added responsibility of trying to adjust its patients to the living conditions made more difficult because of the war. Its workers have endeavored to assist and encourage men who discovered chronic ailments at the time of the draft, and have coöperated with the Red Cross Home Service in the care of the families of soldiers.

THE GODDARD HOSPITAL, BROCKTON.—The Goddard Hospital in Brockton is devoted chiefly to the care of surgical, obstetrical, and a limited number of medical patients. Its activities have been increased during the past year by the opening of the New Goddard Hospital in September, 1918. The new building is centrally located, yet in a quiet, pleasant section of the city. On the main floor are private offices, examining rooms, laboratory, the x-ray department, reception rooms, and library. The east side of the second floor is intended primarily for the medical department, but has been utilized in part for obstetrical and surgical cases. On the third floor is the main obstetrical department, delivery room, and nursery. The surgical department, including operating rooms, sterilizing, and recovery rooms, occupies the fourth floor. The hospital has no open wards, no room containing more than two beds, and has a present capacity of thirty-seven beds.

The annual report of the Goddard Hospital for the year 1918 indicates that this hospital, in common with others, has suffered both because of war conditions and the epidemic of influenza. During the year, 636 cases were admitted: 343 surgical, 256 obstetrical, and 37 medical, an increase of 83, or 15 per cent. over the previous year. The total death rate was 1.1 per cent.: surgical 0 per cent.; obstetrical 1.17 per cent., medical 11 per cent. The report contains records of obstetrical cases, and a summary of surgical operations.

AWARD OF DISTINGUISHED SERVICE MEDALS TO AMERICAN SURGEONS.—In a recent issue of the JOURNAL, there was noted editorially the award of the Distinguished Service Medal by General Pershing to Dr. Joel E. Goldthwait of Boston. This medal has also been awarded to five other American military surgeons, whose qualifications for its receipt have been published as follows in *Science*:

FRANCIS A. WINTER, Brigadier-General. As chief surgeon of the lines of communication, American Expeditionary Forces, from June to December, 1917, he organized medical units at the base ports and in the camps in France. He established large supply depots from which medical supplies were distributed to the American Expeditionary Forces, and by keen foresight and administrative ability, made these supplies at all times available for our armies.

JOSEPH A. BLAKE, Colonel. As chief consult-

ant for the district of Paris, and commanding officer of Red Cross Hospital, No. 2, he efficiently standardized surgical procedures especially in the recent methods of treating fractures. His remarkable talent has materially reduced the suffering and loss of life among our wounded.

GEORGE W. CRILE, Colonel. By his skill, researches, and discoveries, he saved the lives of many of our wounded soldiers. His tireless efforts to devise new methods of treatment to prevent infection and surgical shock revolutionized Army surgery and met with the greatest success.

WILLIAM H. WILMER, Colonel. As surgeon in charge of medical research laboratories, air service, American Expeditionary Forces, since September, 1918, he has rendered most distinguished service. His thorough knowledge of the psychology of flying officers and the expert tests applied efficiently and intelligently under his direction have done much to decrease the number of accidents at the flying schools in France and have established standards and furnished indications which will be of inestimable value in all future work to determine the qualifications of pilots and observers. The data collected by him is an evidence of his ability, his painstaking care, and his thorough qualifications for the important work intrusted to him. The new methods, instruments, and appliances devised under his direction for testing candidates for pilots and observers have attracted the attention and been the subject of enthusiastic comment by officers of the allied services, and will be one of great importance in promoting the safety and more rapid development of aerial navigation.

THOMAS W. SALMON, Colonel. He has, by his constant tireless and conscientious work, as well as by his unusual judgment, done much to conserve manpower for active front line work. He was the first to demonstrate that war neurosis could be treated in advanced sanitary units with greater success than in base hospitals.

Obituaries.

MYRON LAWRENCE MARR, M.D.

MYRON LAWRENCE MARR, M.D., died in New York City, May 20, 1919, aged 67 years.

He was born in Alna, Maine, February 23, 1852, was a graduate of the medical department of Bowdoin in 1879, and practised in Athens Me., until 1888, when he moved to Skowhegan. In 1897 he settled in Dorchester, joined the Massachusetts Medical Society the following year, and practised until 1914, when his health failed. For several years he had spent the winters in

Florida. He is survived by his widow, who was Miss Nellie Dodds of Dorchester, by a son, Dr. Myron Whitmore Marr, now practising at his father's former home in Dorchester, and by two daughters. Dr. Marr was a member of St. John's Lodge of Masons, and while in Florida was president of the New England Association which had its headquarters at St. Petersburg.

EVERETT JONES, M. D.

IN the untimely death of Dr. Everett Jones of Brookline, April 25th, there passed from active life a highly respected and distinguished physician.

A number of basic elements are essential in the make-up of the really successful physician; mere numbers of patients, or a large bank account, or even an extended reputation are not alone sufficient to stamp a man a success. A man may have any or all of these evidences of success, yet may through a selfish motive or a mercenary spirit, stultify his real professional growth and leave his work poorer because of having subtracted from rather than added to it. In such cases the accumulations have been to the man and not to the profession, and perish with his ashes.

Dr. Jones gave himself to his profession and in his giving, his profession was the richer for his living. But the generous giving of himself brought his untimely death.

He began life 51 years ago in Corinna, Maine, and graduated from Boston University in 1898. He began practice in Brookline immediately after his graduation, but a few doors from his residence where he died.

Dr. Jones was successful at once in establishing a lucrative general practice; but his desire was to enter the field of special surgery on nose and throat work. He was appointed assistant surgeon to the Massachusetts Homeopathic Hospital in 1909 and had a large clinic both in the Out Patient Department and the Hospital.

Dr. Jones was the first to introduce into Boston the LaForce method of bloodless tonsillectomy. He performed the operation first at the Massachusetts Homeopathic Hospital in the presence of an interested audience; it was some time, however, before it was generally adopted by other specialists, but is now the method quite generally employed.

Dr. Jones was an active member of the O. O. & L. Society to which he made a number of valuable contributions. He had under preparation a paper for the American Institute of Homeopathy to be read at the forthcoming meeting of that body at Asbury Park.

Dr. Jones belonged to the Massachusetts Homeopathic Medical Society, the American Medical Association, the Massachusetts Medical Society, and other similar organizations. He belonged to the Masons in Brookline, and was a member of the Tedesco Country Club in Swampscott. He had a summer home on Rockaway Avenue, Clifton, on the North Shore.

In 1900 he married Miss Elizabeth Lowe, daughter of Dr. Lewis G. Lowe, of Brookline. She died in 1908 and four years later he married Miss Janet Hartley of Brookline. He is survived by his wife, also by a son of the first marriage and a daughter of the second. He leaves also his venerable father as well as a sister, Mrs. Merton Raynes of Melrose, and a brother, Dr. Frederick E. Jones, a Brookline physician.

DEWITT G. WILCOX, M.D.

Miscellany.

MEMORIAL TO LOUIS WHITMORE GILBERT.

THE Brookline Medical Club desires to express its appreciation of the life and work of Louis Whitmore Gilbert. He served the Club most efficiently as secretary and later as president. His contributions to the discussions at the meetings were always helpful and stimulating, largely because he approached any problem with a refreshing directness, getting immediately at what was essential. No one had higher ideals in the conduct of life or in his professional duties, as those who knew him best can testify.

In his work as a practitioner he combined in a remarkable manner modern scientific methods with wholesome common sense, and added thereto a self-sacrificing devotion to his patients' interests. He was not content to limit himself to general practice but had devoted himself with success to the subject of pediatrics and was one of the staff of the Children's Department of the Massachusetts General Hospital.

With a full knowledge of the nature of his own illness, he faced for several years with wonderful calmness and cheerfulness the inevitable result. His was a courage which did not require the stimulus of war.

In the death of Dr. Gilbert many have lost a true friend and devoted physician.

RESUME OF COMMUNICABLE DISEASES FOR APRIL, 1919.

GENERAL PREVALENCE.

APRIL's total of 7,726 reported cases, including 1,069 cases of influenza, shows a marked decrease from the corresponding month of 1918, when 14,752 cases were reported; the case rate per 100,000 being 193.5 and 376.2 respectively.

The decrease is accounted for by the fact that there have been no outbreaks of any size during the month and, with the exception of measles, no disease has even approached its median endemic index for the month.

Diphtheria was reported in 532 instances, scattered over the entire State; the case rate being 13.3 per 100,000.

Measles reached the total of 1,046 cases. Fall River with 247 cases, Worcester with 182, and Lynn with 63 showed the greatest incidence.

Influenza continues to decline. There were but 1,069 cases reported for the month as compared with 2,928 for the preceding month.

Typhoid Fever was reported in 44 instances; cases being reported from all sections of the State with no outbreaks apparent. With health officers viewing and treating each case as the possible beginning of an outbreak, it appears as if our control and prevention were in a reasonably efficient state.

Lobar Pneumonia continues to be reported in decreasing numbers, only 446 cases were reported during April.

Veneral Diseases. Gonorrhea and syphilis still continue to be reported in goodly numbers, showing that all are co-operating in handling this serious condition. Gonorrhea was reported in 518 instances and syphilis in 419.

Smallpox was reported in 6 instances, 3 cases in Boston, 2 of unknown origin and 1 a direct contact with a case from the schooner *Flavilla*. Two cases were reported from Indian Orchard due to contact with a case from out of the State; one from Gloucester, on the schooner *Hesperus*, contracted by contact with a patient from the schooner *Flavilla*. No deaths have attended these cases to date.

RARE DISEASES.

Actinomyces was reported from Boston, 1.

Anterior Poliomyelitis was reported from Abington, 1; Boston, 1; Lawrence, 1; and Lowell, 1; total, 4.

Anthrax was reported from Woburn, 1.

Dog-bite requiring anti-rabic treatment was reported from Attleboro, 1; Dighton, 2; Lowell, 1; Middleboro, 1; Somerset, 1; and Worcester, 3; total, 9.

Dysentery was reported from Camp Devens, 1.

Epidemic Cerebrospinal Meningitis was reported from Beverly, 1; Boston, 13; Brockton, 1; Camp Devens, 3; Chelsea, 1; Everett, 2; Gardner, 1; Hudson, 1; Malden, 1; Newton, 1; Northboro, 1; Somerville, 2; Sudbury, 1; Watertown, 1; Worcester, 2; and Worthington, 1; total, 33.

Malaria was reported from Boston, 2; and Wayland, 1; total, 3.

Septic Sore Throat was reported from Arlington, 1; Boston, 6; Fitchburg, 1; Haverhill, 1; Lynn, 1; Medford, 2; and Newburyport, 5; total, 17.

Smallpox was reported from Boston, 3; Gloucester, 1; and Springfield, 2; total, 6.

Tetanus was reported from Braintree, 1; New Bedford, 2; and Quincy, 1; total, 4.

Trachoma was reported from Boston, 3; Cambridge, 1; Chelsea, 1; Fall River, 1; Fitchburg, 1; Lawrence, 1; Norwood, 1; and Worcester, 1; total, 10.

The Boston Medical and Surgical Journal

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Original Articles.

MEDICOLEGAL PHASES, WITH PARTICULAR REFERENCE TO TORT CASES, COMPENSATION, AND MALPRACTICE SUITS.*

BY H. H. HARTUNG, M.D., BOSTON.

Member of American Medical Association, Massachusetts Medical Society; Ex-president of Massachusetts Society of Examining Surgeons.

THESE are rather broad subjects to talk about in a short space of time. Volumes have been written on these subjects, but I will endeavor to deal with the most salient points of interest to the general practitioner.

Taking up the first subject, tort cases, there are always two sides to all questions, and this holds good, of course, in these cases. There is the side where the attending or family physician is interested, and the other side, where the medical examiner for the insurance company, or corporation, is interested.

Nowadays, where there is almost every kind of insurance written, such as public liability, team, automobile, and elevator insurance, the public is pretty well educated to this fact, and in most instances when they know that the persons directly or indirectly responsible for the

accident are insured they are ready to make claim for damages, many times for the most trifling kind of injury.

After a person has met with an accident, and is being treated for various kinds of injuries, and sometimes even before the case has been placed in the hands of an attorney, one of the first things arranged for by both parties is a medical examination, to determine the nature and extent of the injury. In most instances, where the physicians of both sides are men of integrity and high standing in the profession, it is possible to arrange for an examination and practically agree on the nature and extent of the injuries, come to a fairly mutual understanding as to the probable length of disability, and in this way quickly dispose of the case, satisfy the injured party with a prompt settlement, and many times this money comes in handy where an injured person of limited means is shut off temporarily from earning his weekly stipend, has very little money saved up, and carries no personal accident insurance.

Personally, I make it a point never, knowingly, to examine a case without the knowledge and consent of the attending physician, who is usually present in the interests of the injured person. Sometimes, where the attending physician is personally acquainted with me, and happens to be too busy (as has happened recently

* Read before the Cambridge Medical Improvement Society, March 24, 1919; East Boston Medical Society, March 28, 1919.

during the influenza epidemic), permission is given me to make the examination without his being present.

The average plaintiff's physician is usually willing to lay his cards on the table, is honest, his patient is honest, and they have nothing to conceal. These are the physicians and cases that we like to deal with.

There are, however, I regret to say, some physicians who are not so honest, and who encourage their patients to exaggerate their symptoms, pain, and suffering. In fact, coach their patients as to what they are to say to the examining surgeon. Then again, there are others who are closely associated with lawyers and who work together; in other words, build up a claim. Such men are in a class by themselves, and are well known to the adjusters and attorneys of insurance companies and corporations, and are certainly no credit to the medical profession.

Some injured people have an idea that by grossly exaggerating their subjective symptoms, pain, etc., that they make a profound impression on the medical examiner, and thereby improve their chances of a larger settlement. As a matter of fact, as a rule, they injure their claims by so doing. Genuine injuries do not require exaggeration,—they are self-evident.

I might say here that I recall a case a few years ago, where claim was made for an alleged accident. The attending physician was notorious for accident cases, and in this particular case he injected tincture of iodine under the skin of the ankle to simulate the appearance of a sprained ankle. No money was paid in this case, as it was proved that it was a fake case; that there never had been such an accident, and that all the parties involved had faked the claim.

At times there are some really amusing features about these cases. You are probably all familiar with the story of the man who was struck and knocked down by an automobile, and when asked as to whether he was hurt or not replied, "How can I tell until I see my lawyer."

An authentic story is told of an Italian landing in New York City. Five minutes after leaving the dock he was struck and knocked down by an electric car, and within ten or fifteen minutes an adjuster of the street railway company handed him \$25 and got him to sign a release. Within a few days after this he started in with a push cart selling bananas, was run into

and knocked down by a team, and his bananas scattered all over the street. In this case he collected \$75 or \$100. In the meantime his price of settlement was going up. During the course of several years this man met with numerous accidents, breaking an arm at one time and a leg at another, and managed to accumulate four or five thousand dollars for these various damages, and then went back to Italy, happy and content with his experiences in America.

Many people who meet with accidents are ignorant as to their rights; are improperly advised by friends and relatives, and formerly easily fell into the hands of runners for attorneys. The latter, however, are rare today, fortunately. The attending physician can not only treat the injured party and relieve him of his pain and suffering, but advise him what to do in regard to making a claim and how to go about it. Some people consult a lawyer before they consult a doctor in accident cases. The attending physician, however, should not personally attempt to adjust or settle the claim. He is not an attorney and has no right to settle the claim. A law has been recently passed making it an offense for anyone to settle a claim unless he is entitled to practise law.

The average layman, and many attorneys, seem to have a mistaken idea about the medical examiner for defendants. They seem to have the idea that we always examine with the object in view of not finding anything the matter with the injured person, and that the medical examiner is paid not to find injuries. Of course, there is nothing to this. As a matter of fact, insurance companies want to know all the facts, for if the claimant is actually suffering from genuine injuries, and they are given all the facts in the case by their expert examiner, and are advised by him as to the probable length of disability, then, through their statistics and trained and expert adjusters and attorneys, who have handled thousands of similar cases, they are able to determine what such a case is worth to settle from their point of view.

Of course, when this stage is reached, if the case cannot be disposed of by a mutual satisfactory agreement and settlement, then the average case goes to court. This often means months, and sometimes several years before the case comes to trial. In the meantime, particularly in nervous and hysterical individuals, it tends

to prolong and aggravate the mental condition of the claimant, until he firmly believes that he has been permanently injured, and will never recover from his injuries. You are all familiar with this kind of case.

Now, for a few words as to court matters, as to the attitude of the attending physician: Most general practitioners dislike going to court to testify in tort cases for various reasons. They are obliged to give up several hours and sometimes several days from their practice, losing their normal income for that time. The average general practitioner is not accustomed to court procedures, and oftentimes makes a poor witness, and many times, if the injured party does not get a verdict he never receives payment for his testimony and treatment of the case, and goes home vowing that he will never testify in another accident case.

Many physicians go to court with no idea of what is expected of them. They bring no notes as to when the accident happened or the nature of the injury, no record of the number of visits made, and the amount of their bill, all of which are of the greatest importance.

They rely on their memories, or guess at the facts, and expect to let it go at that. As a matter of fact, these are gross errors on the part of the attending physician, and tend to harm his patient's case in the eyes of the court and jury, and, left to the mercies of a trained and experienced defendant's attorney, the careless physician can be made to feel very much embarrassed, to say the least.

The attending physician can, as a rule, make the average case comparatively simple, and assist the attorneys for both sides, the court, and the jury, to understand the case clearly if he brings his notes with him, also his records of the number of his visits, and whether or not his bill has been paid. He should describe in a dignified manner the nature and the extent of the injuries, his diagnosis and treatment, and his opinion of the case. Speak clearly and distinctly, and talk directly to the jury; remember they are the ones to determine the merits of the case. Avoid medical and technical terms as far as possible; use every-day English. Remember you are talking to a jury and not to a gathering of medical men.

Think carefully before answering questions, particularly on cross-examination. Remember that in many instances you are in the hands of expert trained trial attorneys, who have tried

thousands of similar cases, many of them being more familiar with the medical and surgical aspects of court cases than the average general practitioner, who are ready to pick you up at the least slip you make, and who are inclined to make life miserable for a careless medical witness.

In giving testimony the physician is first called upon to state his medical qualifications, is then asked when and where he first saw the injured party, and what he found upon examination. In stating his findings he should state the objective symptoms first, and then he may or may not be allowed to state the subjective symptoms, as related by the injured person. Because of the possibilities of legal procedure in all accident cases, it is advisable for the attending physician to make careful notes of every accident case coming to his notice, so that a complete history may be available when needed. (Moorhead.)

At times the physicians will be asked by the attorney to answer "Yes" or "No." If he is unable to answer "Yes" or "No" he should say so at once, and not try to hedge or beat about the bush. It will only lead him into entanglements difficult to crawl out of. Under some circumstances the judge may rule that he can answer the question in his own way.

After the physician has testified as to his findings he is often asked a hypothetical question that seeks to embody all the essential facts of the case, beginning with the usual form, "Assuming that on such and such a date" and then follows an account of the accident, the symptoms, etc., and ending, "Now assuming the facts in the hypothetical question to be true, can you state with reasonable certainty whether or not an accident of the type described would or would not be a competent producing cause for the conditions you found?" (Moorhead.) The usual answer expected to such a question is "Yes" or "No," and many times it is difficult for a witness to answer "Yes" or "No," particularly when the question asked involves hundreds and sometimes thousands of words. If the physician feels that he is unable to answer the question "Yes" or "No," the best answer is that he is unable to answer "Yes" or "No."

COMPENSATION.

Prior to July, 1912, very little was known about Workmen's Compensation in this country.

although it had been in existence in England, Germany, and France for a number of years.

Formerly, if a workman was injured in the course of his employment, whether the accident was due to his own neglect or neglect on the part of his employer or his fellow workmen, he was usually obliged to depend upon the service of an attorney to make claim for his injuries against his employer, bring suit, and oftentimes have to go to court, after waiting, sometimes, several years, and take his chances of proving his case before a jury, and for them to determine whether or not he was entitled to damages, many times having the jury decide against him, or, if the verdict was in his favor, there might be a further delay by the defendants appealing the case, or in some rare cases where the attorney collected a good-sized judgment he would have to be satisfied with what the attorney saw fit to give him.

In Massachusetts, prior to July 1, 1912, when the Workmen's Compensation Act went into effect, a workman injured in industry, in a large percentage of cases, found himself without any legal claim for the loss of his wages, his doctor's bills, and his suffering. He bore the whole burden himself, or, if his wages were small, and his opportunities to save for a rainy day limited, he often found himself and his family entirely dependent upon the kindness, and perhaps the charity, of the community in which he lived.

Since the Workmen's Compensation Act went into effect, this has been done away with, and the workman's rights and interests arising out of accidents in the course of their occupations are protected and administered by the Industrial Accident Board, consisting of a chairman and six members appointed by the Governor of the Commonwealth.

Massachusetts was one of the first states to enact such legislation, and since then other states have followed, until it is now in existence in about thirty of the states. At first the laws enacted covering such a broad subject were crude and in some instances unfair to the workmen and the insurance companies affected by this new legislation, but from year to year there have been amendments and improvements, until, at the present time, it is working out fair and just to all parties concerned. As usual, the Commonwealth of Massachusetts led, and the others followed.

Today the workman has the choice of two methods of claiming indemnity for his injuries.

He must select one of the two; he cannot benefit under both. He may select his rights under the Compensation Act, which entitles him to two-thirds of his weekly wages (\$14 maximum compensation) until he is able to return to work, beginning at the end of ten days after having been injured, or he may elect to claim damages under the Common Law, in which case he cannot benefit under the Compensation Act. If he elects the common law, under these statutes he must give written notice of such intention to his employer at the time of his going to work, and this must be done with each and every employer, and in cases of death his estate forfeits all rights to recover. Under the circumstances it is readily understood that the average workman, not being familiar with the law, very seldom elects common law, and for that reason the average workman, therefore, comes under the benefits of the Compensation Act.

At first the medical profession was slow to familiarize itself with the medical features of the Act, and even today there are some physicians who know very little, and care very little, about what it would mean to them as physicians of their communities. The Compensation Act has been in force now since 1912, and is here to stay. There have been numerous changes from time to time, and undoubtedly there will be further changes.

For the benefit of those of the profession who are not familiar with the Act, I should advise their obtaining a copy of the Workmen's Compensation Act, issued by the Industrial Accident Board, State House, Boston, Mass., (from which I am freely quoting). Read it through carefully, and familiarize yourselves with the various rules, keeping the book handy for ready reference. By doing this, many misunderstandings of the past can be cleared up and avoided in the future.

In order to make certain portions of the Act clear to you I will take the liberty of quoting certain sections:

"In all cases of injury which require medical attendance, proper and reasonable medical bills are paid for a period of two weeks from the date of the injury, or, if the employee is not immediately incapacitated by the injury, then for a period of two weeks from the time when incapacity began. This medical attendance may be furnished by the employee's own doctor if he desires. Also, in unusual cases, medical bills

may be paid for a longer period than two weeks." (The unusual element is determined by the Board.)

"If incapacity for performing work extends for a period longer than ten days after the injury, then weekly compensation on this account dates from the eleventh day following the injury, and such payments continue during the period of total disability, subject to the maximum period of five hundred weeks, or gross payments of \$4,000, unless, in some cases, the case is disposed of by agreement of both parties under what is known as a lump sum settlement, this, of course, being subject to the approval of the Industrial Accident Board.

Compensation is payable at the rate of two-thirds of the regular weekly wages during the time when no work can be done; these payments, however, may be not less than \$4.00 nor more than \$14 per week. (On injuries which occurred on or after April 26, 1918, the minimum weekly compensation is \$5.00.)

If the injury is such that the employee can do some work but is unable to earn as much money as before the injury, then compensation is payable on account of partial incapacity at the rate of two-thirds of the difference between the earnings before the injury and the earnings thereafter, but in no case may these payments exceed \$10 per week.

If portions of fingers, toes, feet, and hands are amputated or rendered permanently incapable of use, additional, sometimes called specific compensation, is due at the same rate as for the total incapacity, except that the maximum weekly payments on account of this type of benefit are limited to \$10 instead of \$14. The periods for which such additional payments may be made range from twelve weeks, for the amputation of a finger joint, to fifty weeks for the amputation of a hand or foot, or for the permanent incapacity of these members.

If an injury causes the reduction of the employee's vision in either eye to one tenth normal with glasses, additional compensation is due for a period of fifty weeks; for the reduction in vision in both eyes additional compensation is due for a period of 100 weeks."

Much discussion has arisen as to what is meant by reasonable bills for the treatment of compensation cases, and among a certain class of medical men there has been a feeling of dissatisfaction and that they were not being treated fairly. At first when compensation went into

effect, a certain class of men thought they were going to get rich out of the insurance companies, that the insurance companies were obliged to pay for medical attendance for the first two weeks, and they proceeded to put in as large bills as possible. Many of these cases were slight injuries, which, if the injured party were paying the bill himself, might have necessitated two or three visits, but these men started in making two visits a day for 14 days, presenting bills for \$28 in each case, and sometimes more, and at first they got away with it. After the first two weeks, when they knew that the insurance companies were not responsible for any further bills, they ceased making visits, and if the injured party needed further treatment they refused to treat him, or referred him to a hospital. Even today there are men who insist on sending in bills for \$5.00 for a house or office visit. Of course the Act never intended such fees to be charged, and the insurance companies naturally protested, and were upheld by the Board. It was assumed that the charges for professional services to injured workmen under the Compensation Act would be along the lines of what they would be able to pay themselves if they were injured and no compensation existed.

Most insurance companies are willing to pay from three to five dollars for the first treatment, depending upon the nature and extent of the injury and upon the amount of time and work done at the time of the first treatment. For example, where it is necessary to stop hemorrhage and suture wounds; subsequent treatment calls for fees of from \$1.50 to \$2.00, depending upon what the treatment is and where it is given. For giving ether a fee of \$5.00 is usual. Where there is a simple fracture to reduce, such as Colles fracture, or fracture of the tibia or fibula, fees from \$20 to \$25 are considered reasonable. Of course, there are some bad cases, such as compound fractures, and fractures of the skull, which require hospital treatment, and most of the hospitals have made arrangements to handle such cases at a fixed price, with the approval of the Board.

A large proportion of the small injuries happening to workmen can be treated so that the injured workman can return to work from within ten days to two weeks. Of course, where there are bad fractures and septic conditions a much longer time is required, and these are the cases where the surgical treatment extends be-

yond the first two weeks, and the bills extend over a longer period. The principal idea, however, is to get the man well as quickly as possible so that he can get back to the condition of earning his own living.

Prevention is more desirable than the payment of compensation and workers are more desirable than non-workers, as they are more valuable to themselves, their employers, and the community. The prevention of accidents and sickness among workers is now looked upon as one of the biggest problems of industrial life, and the insurance companies, with the coöperation of the industrial accident boards, through their inspection departments, are educating employers to take every precaution to guard and protect their employees from injury (by the protection of gears, saws, shafting, elevator wells, etc.), and in this way are cutting down the number of accidents and reducing the amount of lost time and wages; for example, men working about emery wheels, where pieces of steel and emery frequently flew into the eyes, causing serious injury to the eyesight, and frequent loss of sight in one or both eyes. Such injuries at one time constituted the largest percentage of injuries to workmen. In order to prevent such accidents workmen are provided with strong goggles, and are required to wear them. As a result of such protection, injuries to the eyes have been reduced to a minimum.

From time to time the cry has been raised by a certain class of medical men that they were being prevented from treating compensation cases, and that these cases were all being treated by doctors selected by the insurance companies. This resulted in the legislature passing the law that the injured workmen could select their own doctors. Frequently the injured man has no regular doctor, and does not know to whom to go, and sometimes gets to a doctor who is not familiar with the treatment of industrial accident cases, and instances are on record where such cases improperly treated, such as septic wounds, etc., have become so bad as to require amputation of fingers, hands and arms, and even caused death, whereas if properly treated from the very start such complications might not have arisen.

After a certain length of time following the passage of this law, it was found that the best results were not being obtained, and on recommendation of the Board the law was changed, requiring insurance companies to fur-

nish full medical treatment, giving them the privilege of advising them who should treat the cases.

There is very good reason why the insurance companies are interested in this matter. Having a large financial interest in all these cases, they naturally desire to see the men return to work at as early a date as possible, and as is consistent with good recovery, and, therefore, they employ the best skilled men; men who are trained in the handling of industrial injuries.

At first compensation was intended to cover injuries arising out of and in the course of the workmen's employment. Gradually, however, there has been a more liberal interpretation given, so that diseases arising out of or aggravated by the occupation are included in the working of the Compensation Act, such as tuberculosis, rupture, lead and gas poisoning, etc.

Malingering and exaggerations will prevail to some extent in both personal accident and compensation cases. It is almost a maxim that subjective complaints are exceedingly rare unless the injury is made an item of gain, financial or otherwise. Hurts received in sports or those due to the carelessness or ill fortune of the recipient are usually recovered from when objective evidences disappear, but identical hurts, which are being charged to the financial accounts of others, are rarely wholly relieved until adjustment is made. (Moorhead.)

MALPRACTICE.

We now come to the subject in which I believe you are most interested as individuals and as a group.

Dunglison's definition of malpractice is bad management or treatment; also criminal abortion. From our experience, however, with the defense of so-called malpractice suits in the past few years, the better definition might be blackmail or legal abortion, if such a phrase can be used. Dr. George W. Gay, of Boston, published an article in the BOSTON MEDICAL AND SURGICAL JOURNAL of September 7 and 14, 1911, entitled "Suits for Alleged Malpractice," and reviewed the conditions that confronted the profession in Massachusetts at that time very comprehensively.

Conditions have not been changed much since that time, except possibly to become worse. This is particularly noticeable in Massachusetts since 1912, when compensation became effective.

The care of injured workmen under the Compensation Act resulted in a reduction in the field of a certain class of attorneys who devoted their energies to the bringing of personal injury claims and suits. There has been a very noticeable increase in malpractice suits.

Dr. Gay calls special attention to the necessity of the profession giving this subject more consideration, thereby developing some means of overcoming the tendency of such claims and suits to multiply. He emphasizes his belief that one of the most active causes of such suits is the willingness of doctors to pay, or permit their insuring company to pay, money for settlement in these cases, instead of defending them to the court of last resort. I quote his language, which it seems impossible to improve upon.

"Settlement of these claims encourages imposition and extortion. The principle is wrong and the practice worse."

"While malpractice suits against reputable physicians may and generally do give rise to an infinite amount of trouble, anxiety, and no little expense, yet the writer cannot believe that they do much permanent harm to their reputations and business."

"So long as there are ungrateful patients and pernicious lawyers and doctors, physicians, however accomplished and renowned, must run the risk of being haled into court upon the most unjust charges and put to the trouble and expense of defending themselves, their reputations, their characters and their bank accounts, if they be so fortunate as to have one, against blackmailers and "ambulance-chasers" that infest every community."

"Making due allowance for human limitations, the cases are rare in which a respectable physician should be haled into court and made the victim of public criticism, censure and pecuniary profit. And, furthermore, the instances are still more rare in which it is the physician's duty, or in which he is justified in appearing in court as an expert against a reputable practitioner who is defending himself in a suit for alleged malpractice."

"In the interests of a 'square deal,' of right and justice, the honorable physician should be safe with his fellows and associates."

"Care, forethought, and discretion would seem to be our only safeguards."

"The physician is legally and properly bound to exercise due care and skill in the treatment

of his patients. Having done this he is not responsible for the results in the case, whatever they may be."

"No qualifications suffice to protect the physician from these assaults."

"The law does not sanction experiments in our profession in the care of the sick. The moment the physician departs from the usual and accepted mode of treatment of a case he renders himself liable to action should the termination be unsatisfactory. The consent of the patient, given before witnesses and duly recorded, would be the best possible defense under these circumstances."

"Reasonable and ordinary care of the case submitted to him; exercise of his best judgment in cases of doubt,—these promises he takes with him to every sick room."

"Prompt and repeated consultations should be requested in difficult and obscure cases, for the double purpose of avoiding error and dividing responsibility."

"Careful and explicit explanations of the nature of serious cases, together with the complications liable to arise and their probable termination, may well be given the patient or some reliable person early in the attendance. This for our own protection."

"No physician is legally obliged to respond to any call for his professional services."

"A doctor is not a public servant, as is a policeman or a fireman, etc."

"Anesthetics should never be given to women except in the presence of one or more of their own sex."

"The value of careful records of our cases is in evidence under many different conditions, hence the importance of complete notes as to dates, events, names of consultants, assistants, etc."

"Under certain conditions complete notes might prevent legal proceedings, and in many other conditions may be of considerable importance."

"In the event of suit, or of a threatened suit, the defendant should neither talk nor write letters relating to the case in question, as anything he may say or write may be used against him in Court."

"Have no communication with the plaintiff, except with or through your counsel. It is the business of the attorney to handle these affairs."

"Reputable physicians recognize their duty

and their responsibility to the public. They have prepared themselves by hard work and the expenditure of time and money to fulfill those duties in a reasonable manner. Their fitness to practise their profession has been certified by the State. They are ready at all times to respond to demands for their services regardless of compensation. Their services are for the rich and poor."

"No profession does so much gratuitous work for the public as does the medical profession.

"The public, having a clear understanding of the facts mentioned in this paper, cannot in justice and reason blame the members of the medical profession for their determination to stand together in opposing and contesting claims brought against them for alleged malpractice; claims brought more frequently, perhaps, by their charity patients than by others; for rejecting all overtures looking to a settlement of these claims out of court; for resorting to justifiable measures, as medical defense organizations, etc., to protect themselves against imposition and blackmailing schemes for extorting money; for declaring that an unjust claim against a reputable physician lies against not an individual but an association of hundreds or even thousands of individuals, whose policy and whose practice is to contest all claims of this sort to the last extremity rather than compromise or settle them out of court."

"Let the public understand that reputable physicians are a unit in this matter; that they will stand by each other in their defense of the right as against the wrong, regardless of time, trouble, and expense; that we mean to do our best for the welfare of our patients, and having done that we naturally resent being called upon to defend such an action at law."

I have quoted Dr. Gay at such length for the reason that I feel that his thoughts are the result of many years of experience, and are presented more clearly and forcibly than I could hope to present the same views. I might say that Dr. Gay was of great assistance to Dr. H. T. Weston of the Home Office of the Aetna in formulating the Aetna Group Plan of insurance for handling these matters.

For a number of years various insurance companies and mutual physicians' organizations, in a rather unsatisfactory and unsystematic manner, offered to insure physicians against malpractice suits. Owing to competition, there was a marked difference in the cost

of policies and the contracts were more or less unsatisfactory.

It finally resulted in the Aetna Life Insurance Co., after a great deal of careful thought and effort by the best experts on the subject, issuing their Physicians' & Surgeons' Defense Policy, which they have copyrighted. This policy may be bought by the individual or in the form of a group policy, where the individual is a member of a medical society, branch medical society or club whenever 25% of the membership of the district or branch society comes in under the group form policy. The individual policy, of course, is more expensive; the group form costing less.

Being more familiar with the Aetna policies, having had considerable experience in assisting counsel in the defense of a number of cases, perhaps I may be privileged to speak more specifically about the Aetna policies. And right here let me say that I am a firm believer in all forms of insurance. While at times an insurance agent may be considered a pest by some people, really the medical man should consider an agent who solicits physicians' defense insurance, a blessing in disguise.

If you own property you would not think of being without fire insurance; if you own an automobile you would not consider being without liability, fire, and theft insurance; then why refuse to consider a defense policy? You may argue that you have been in practice for ten, fifteen, or twenty years, and have never been sued or threatened, but nevertheless this does not render you immune; you may wake up tomorrow and find an officer waiting to serve you with papers for some alleged mistake, the same way as you might wake up during the night and find your garage on fire. You would not feel so terribly put out about the fire, because you knew you were protected by a good fire insurance policy, but in case you were not insured, or had allowed your policy to expire without renewal, you would curse yourself for being all kinds of a fool. Therefore, does not the same argument hold good in reference to the dangers of malpractice or blackmail suits?

There is a certain class of people always on the lookout to see how and where they can force other people to pay money, legitimately or otherwise, mostly otherwise, and, as a rule, the medical man is the easiest mark, whether it is oil, mining, or other stocks, or a claim for some alleged mistreatment. Some of these people are

professionals at the game; others mere amateurs. The professional is a dangerous menace to the medical profession; the amateur a bungler but, nevertheless, a nuisance and a source of worry to the busy practitioner.

Most high class attorneys will have nothing to do with these cases. However, there are attorneys who will not hesitate but will even urge suits. Foreigners and the ignorant class are more prone to bring malpractice suits than any other class. Many times these people will not only refuse to pay legitimate bills for professional services, but will threaten suit, adding insult to injury. In most instances it is purely blackmail, the individual suing or threatening suit hoping that the doctor will be induced to give up a few hundred dollars rather than go to court and get his name in the newspapers. In the majority of these threatened suits, and even where suits have been brought, they have no intention of going so far.

I myself was threatened several years ago with a suit for malpractice by a patient who refused to pay a bill which had been on my books for months, and I finally notified him that if the bill was not paid on such and such a date I would place it in the hands of my attorney. He came back with the answer that if I persisted in my claim he would sue me for malpractice. I was absolutely sure of my position, and knew that he had no claim against me whatever, and I called his bluff. I intended to get satisfaction, if only a judgment in my favor. My attorney brought suit. The patient had the case postponed and postponed from time to time, until finally he saw there was no way of stalling any longer, and finally offered a settlement. He paid me and failed to sue me for malpractice. Fortunately my mind was at ease all the time, for even if he had sued me I was protected by a policy in the Aetna, and I felt certain that their able counsel would protect my interests to the limit.

As I said before, I am a firm believer in all forms of insurance, and in buying insurance be sure that you are in a good reliable company. Individuals, as well as firms, cannot afford to attempt to carry their own insurance; it requires too much capital. You know of instances where one bad automobile accident with a judgment against the individual of from five to ten thousand dollars or more, or a bad fire without insurance, has resulted in the individual being wiped out financially, and these arguments hold

good in favor of the Physicians' Defense Policy. Some argue that it is commercializing the profession and lowers the dignity of the profession, etc., which is not true, of course. While we are indeed in an age of commercialism, it should be the means of banding the medical profession closer than it ever has been before, to protect its sacred rights and interests which have been handed down to us from the past ages, when such measures as blackmail were unheard and unthought of, and in a way infuse some good business methods and systems into our daily routine, of which the medical fraternity is in some ways sadly in need.

Always read your policies at the time they are delivered to you, and if there is anything you do not understand, immediately get in touch with your agent or broker and have an explanation. Do not wait until something happens, or at a too late date get out your policy and find that there is some clause of some kind missing, and that your particular case is not covered. This advice holds good for all forms of insurance policies. The average busy practitioner is hastily solicited, gets his policy, pigeonholes it, or puts it away in his safe, and proceeds to forget all about it.

I firmly believe that every physician and surgeon should own a defense policy, whether he is a specialist or a general practitioner. There seems to be a mistaken idea that the general practitioner does not need a defense policy, that it is only the specialist and particularly the surgeon, who is liable to be sued. Our statistics prove that this is not the case; no physician is immune. It is true in many cases that the individual suing looks into the financial standing of the physician, informs himself that he has a large practice, owns property, has one or more automobiles and naturally must have a good fat bank account, and if he thinks he has a good chance of obtaining easy money, suit is brought or threatened. Or, where the attending physician is in moderate circumstances, and a prominent consultant is brought into the case, the consultant is usually the one sued, no matter what the merits of the case are.

If you are insured under a physicians' defense policy in a reliable company you are relieved of all worries and responsibilities. There is no need of retaining personal counsel and spending a lot of money on legal expenses, etc.; your insurance company does all this for you and more. They know how to handle such cases:

you do not. They have eminent counsel, men trained in the intricacies of the defense of such cases. You might select a man who had had no experience in such cases.

If you are not insured, and a suit is brought against you, or you are even threatened with a suit, it means all kinds of trouble, mental, financial, and otherwise; attachment of your property, automobiles, and bank accounts; visits from constables, sheriffs, and other disagreeable people, and while you may be able temporarily to get some relief by giving a bond, this is only the beginning of your troubles.

Incidentally with all the every day details and troubles that the busy practitioner carries around with him, you have all of a sudden out of a clear sky, unexpected trouble of this nature added to your ordinary burden to carry around with you; worrying about the possible outcome, figuring out that if judgment is obtained against you for \$5,000 or \$10,000, or more, how you will pay it; perhaps some sleepless nights, and the possibility of carrying this problem around with you sometimes for several years before the case is reached in court. Therefore, there seems to be but one answer to this problem: insure in a good company; and as for you gentlemen who are already insured in the *Etna*, all I can say is there is none better.

But, gentlemen, the mere buying of the policy does not end the matter so far as you are concerned. Remember you are entering into a contract with a corporation in consideration of so many dollars. The corporation agrees to do so and so, but you should realize that naturally in consideration of the special reduced premium the Company expects something from you in return. There has been in the past an apparent lack of coöperation on the part of the doctors, as individuals and as groups. We must and you must pull together; in union there is strength. In matters of this kind we should mentally adopt some standards and mottoes, such as "United we stand, divided we fall." Our fraternal pride should demand "Millions for defense, but not one cent for blackmail," and the only way we can destroy this blackmail bacillus is by taking a firm stand with the insurance company and fighting every case to a standstill. Up to the present time the *Etna* has issued to you a group policy at a greatly reduced premium, in consideration of your united coöperation, and this is the only company that has not advanced its premium, and

under the circumstances it would seem that it is entitled to your greatest support in this serious and important problem.

In this connection I wish to cite a case of suit for malpractice against one of your well-known fellow practitioners, and its defense by the *Etna*, whose able handling of the case by the Honorable William A. Morse, resulted in a clean verdict for the doctor.

A woman had some trouble with one of her teeth. She went to a dentist, had the tooth treated, and finally had the tooth capped. As frequently happens in such cases, the root became infected and she went back to her dentist, but he was away; she went to another dentist and he advised extraction. The tooth was extracted, but the root cavity was not curetted and the abscess formation continued, involving a large area of the jaw. Finally she entered a hospital and came under the service of your friend the surgeon. He treated the case along the usual lines, and poultices were applied to the face to bring the pus to a focus. The abscess was opened and drained, and after the course of about two weeks the woman recovered sufficiently to be discharged, apparently relieved. Subsequently the infection extended to the jaw bone and resulted in osteomyelitis. She was finally x-rayed by an x-ray expert, who referred her to one of the best oral surgeons in Boston. The osteomyelitis finally spread all over the lower jaw, requiring the removal of all her teeth and several operations for the removal of dead bone.

This woman was a working woman and had no money of her own, but some women friends of hers urged her to bring suit, and the party selected to sue was the surgeon who operated on her free of charge, but who exercised due care and skill in the treatment of the case. The reason given for bringing the suit was that the surgeon had made a mistake in applying poultices to the face, and in this way spread the inflammation. During the course of the trial the defense submitted evidence through two women witnesses that the plaintiff in the case sued the surgeon because he was reputed to be a man of wealth and the dentists had nothing tangible.

I had the privilege of assisting our counsel, the Honorable William A. Morse, in preparing the defense of this case, and also had an opportunity to examine the plaintiff before the trial, and I must admit that the oral surgeon who treated the plaintiff offered me every means in

his power to investigate the case from a medical point of view, showing me all his x-ray plates and his notes, which were very concise and complete in every way. In fact, he went so far as to admit that he had advised the plaintiff to drop her suit against the surgeon, but, notwithstanding his advice, she persisted, and the case was fought to the limit.

The trial of this case occupied nine days in court, and, of course, it was a contest of medical evidence. Our defense put on nine prominent expert medical, surgical, x-ray, and oral surgeon witnesses, and the final result was a clean verdict in favor of the defendant, wholly exonerating him. I might state here that the defense of this case cost the company something over two thousand dollars.

Another case several years ago, where a very prominent eye-specialist of Boston was sued for an alleged mistake in treatment; in this case a verdict was brought in against him for \$8,000; this man had been in practice for over forty years, had treated thousands of cases gratuitously and had been imposed upon by many people who could well afford to pay; this action broke him up so completely that he gave up his practice and retired.

A recent case in Middlesex: a prominent member of the profession was sued for alleged failure to make a proper diagnosis and render the proper treatment. In this particular case, he was called in, in emergency, to deliver the patient of a brother practitioner who was away from his office at the time; he delivered the woman, and before leaving the case, the family physician arrived and he turned the case over to him; several months after the woman sends for the doctor who had delivered her, the baby was improperly nourished, the mother was anemic, and her milk was poor: the doctor advised modified milk and saw nothing further of the mother or child until some time in October, when he was again called in to see the child, whose only symptom was that it cried when the right leg was moved; the mother admitted that she might have injured the child, while putting it in a high chair; thinking of the possibility of injury to the hip joint, the doctor took the child to the hospital and had it x-rayed; x-ray was negative; after giving the child a careful examination, he decided the child was suffering from rheumatism and treated the child accordingly, and the child improved; after a number of weeks the doctor called at the house but the mother refused to allow him to

see the child. This was the last the doctor saw of the case; months after, when his bill was placed in the hands of a collector, he was notified that suit was being brought against him.

While the case was being tried, plaintiff's attorney introduced a medical witness, who testified that he saw the child once and in his opinion the child was suffering from scurvy; this medical witness, when asked if he was a member of the Massachusetts Medical Society, answered no, that he had never been invited to become a member, any more than he had been invited to become a member of the Boston Athletic Association.

This only goes to show that attorneys who handle these cases can find medical witnesses, outside the Medical Society fold, who do not hesitate to testify against reputable physicians.

The trial of this case was short, as the plaintiff had no case and resulted in the jury bringing in a clean verdict for the defendant in fifteen minutes.

At the present time, gentlemen, many of you are insured by the Aetna Life Insurance Company under its new group form policy, the terms and agreements of which I believe you are all familiar with and for which no increase in premium was made.

In conclusion, let me say that we must be extremely careful about criticizing or knocking the acts of our fellow practitioners, whether we are personally acquainted with them or not, particularly in the presence of others, especially in the presence of a patient, who, perhaps, has come dissatisfied from some other doctor.

Sometimes a thoughtless remark is picked up by the disgruntled patient and starts him thinking, and the next thing we know there is a suit started; this has happened in many instances, whereas a diplomatic handling of the situation might have prevented such an unfortunate happening.

The Golden Rule happens to fit the medical profession as well as the public, therefore we should be ever ready to assist and protect our fellow practitioners to the utmost of our ability, and in this way, the evils of malpractice suits will be lessened.

I desire to take this opportunity of expressing my thanks to Dr. George W. Gay of Boston, Dr. John A. Moorhead of New York, Dr. H. T. Weston of the Aetna Life Insurance Company, Hartford, Ct.; also the Industrial Accident Board of Massachusetts, for their kind assistance in the preparation of this paper.

PREMATURE SEPARATION OF THE PLACENTA.*

BY PAUL APPLETON, M.D., PROVIDENCE, R. I.,

Out-patient Physician, Providence Lying-in Hospital.

By premature separation of the placenta is meant the partial or complete separation of the previously normally implanted placenta, at any time before the completion of the second stage of labor. By normal implantation is meant implantation of the placenta in the uterus above the point later developed as the contraction ring of Schroede,—that is in the fundus or either cornu. A placenta may have been normally implanted, subsequently separate and prolapse, and later become reimplanted as a partial or total previa, with the latter diagnosis at the time of delivery.

The condition has been known since the time of Hippocrates, and by most of the older writers on obstetrics, but it has not been sharply distinguished from placenta previa until recent years. In fact, the differential diagnosis is often difficult and sometimes impossible until discovered by post-natal inspection of the placenta itself.

Frequency. Analysis of the statistics of hospitals and those given by writers on the subject vary within very wide limits. It is therefore impossible to make any definite statement as to the frequency of the condition. The reason for this variation in figures is due to individual inaccuracy of different observers, first, in diagnosing the condition, and second, in making sharp distinction between the premature separation and placenta previa. The following table is prepared from statistics where the condition was accurately diagnosed from the fact that separation led to definite characteristic symptoms.

HOSPITAL	CASES OF LABOR	SEPARATION-	RATIO
Sloan Maternity	5,900	57	1 to 104
Dublin Rotunda	6,453	70	1 to 92
New York Lying-in	10,000	0	
Chicago Lying-in	15,000	43	1 to 348
Chicago Lying-in (later)	3,600	6	1 to 600
Providence Lying-in ...	914	7	1 to 130

Most writers state the ratio as one case in five hundred, but there is no doubt that it occurs more frequently. The figures above give a general average of one in two hundred and fifty-five cases and these all diagnosed. Judging by the frequency of placental disease and clots found postpartum one would almost es-

timate that separation occurred at least in part, in about one out of every fifty cases. Careful observation of the clinical cases of antepartum hemorrhage together with minute inspection of every placenta delivered will again revise these figures in time, and no doubt show that premature separation of the placenta is a common condition.

Etiology. Previous observers have assigned all sorts of conditions, both systemic and local, as being the etiological factor of the separation before the second stage of labor is complete, principal among them being endometritis, syphilis, uterine infarcts, and true placental disease. The evidence in many reported cases shows only coincident complicating disease without any pathological basis for blaming such disease as the causative factor. True endometritis is only caused by the pus forming organisms, and such an endometritis is also usually puerperal, the result of introducing pyogenic bacteria by the vagina through faulty technique in delivery. Conceivably such bacteria might be introduced during pregnancy, by dirty instrumentation, pelvic examination or even coitus. Then the bacteria migrating back of the membranes could set up an inflammatory process back of the placenta on the uterine wall, causing a separation. Local pyemia from a distant focus might lead to similar condition, the organisms traveling in the maternal circulation.

It is a well known fact that the gonococcus rarely, if ever, attacks the uterine mucosa, except in the cervical portion. It produces an endocervicitis not an endometritis. The fundus uteri is extremely resistant to the gonococcus, but even assuming that this organism led to inflammation of the fundus, it is unreasonable to suppose that a subsequent pregnancy could lead to a normal implantation in the beginning, but to placenta previa, partial or complete, or immediate abortion. The tubes are most often affected of all the internal organs of generation, and the same holds true of tuberculosis. Syphilis, according to most pathologists, attacks by preference the portio cervicalis, setting up an endocervicitis, never an endometritis. Even if true gummata were present in the endometrium,—a condition rarely met with post mortem,—it is doubtful if the ovum would be normally implanted in the beginning, on account of the unfavorable condition for its settlement in the body of the uterus.

* Read before the Providence Medical Association, April 7, 1919.

What is erroneously termed endometritis by many gynecologists is really a gland hypertrophy due to congestion. It occurs normally premenstrually and is essentially a normal physiological process. A somewhat similar congestion might be set up by extraneous factors such as tumors exerting a mechanical pressure, and thus by altering the maternal and foetal circulatory relation mechanically lead to a separation of the normally implanted and firmly attached placenta. Inasmuch as we know that fibromyomata which have been previously unrecognized may take on a rapid growth in pregnancy, such a condition might logically be considered as a predisposing cause for the placental separation. I have not, however, seen such a case reported in the literature. Infection of the uterus probably occasionally occurs, subsequent to the formation of the placenta, as a result of emboli or other mechanical conditions cutting off the circulation to a part of the uterus and its mucosa. This would cause a separation. Arteriosclerosis has been reported to have caused a separation through a circulatory disturbance at the foetal maternal junction. It would doubtless be rare because marked arteriosclerosis is a gradual disease and gives symptoms only as a result of a long standing chronic process. It is extremely unlikely that such a condition should occur in the uterine vessels between the time of normal implantation of the ovum, and parturition. Such serious arteriosclerosis at the time of conception would probably prevent a normal implantation.

It would seem that most of these causes of premature separation of the placenta assigned to constitutional disorders might be dismissed. Perhaps it is fair to admit the possibility of infarction of the uterus, arteriosclerosis, and tumors as predisposing causes, but they are undoubtedly so rare, if they occur at all, to be only of academic interest.

In the pathological conditions of the placenta itself, there are true predisposing causes of its separation. In chronic diseases like syphilis and tuberculosis, the placenta may be the seat of the characteristic lesions. Definite tubercles and gummata have been frequently observed. Such cases may also lead to fatty and amyloid degenerations of the placenta. The most potent and common cause of placental disease is hemorrhage from rupture of the placental sinuses. The blood may escape either on the

foetal or maternal surface. More often and serious, however, is the case when the blood sinuses rupture directly into the parenchyma of the placenta, causing the so-called "placenta apoplexy." This results in clotting, organization, and later scar formation, which scar tissue may contract and, exerting pressure on the placental margins, weaken their attachment or even that of the entire tissue. Again, without evident rupture of a sinus, parts of the placenta may become infiltrated with blood and present the characteristics of a true infarct, which may later be replaced by a fibrous tissue or undergo a true degeneration, thereby extensively damaging the placenta so as to interfere with its function as well as seriously weaken its attachment to the decidua basalis. Tumor formation and cystic degeneration are of occasional occurrence. The latter does not properly enter this discussion, for we know it leads to the formation of the so-called "hydatidiform mole,"—a well recognized condition with a distinct train of symptoms and results. I have not seen a true case of premature separation reported to be the end result of cystic degeneration.

Four cases are on record of premature separation of the placenta occurring coincidently with the hemorrhagic diathesis in the mother. In two of these cases there was a family history of true hemophilia. The relation of the one condition to the other has not been perfectly explained, but Barehat in analyzing one of the latter cases post mortem says, "The findings in such placentas suggest a toxic influence from the products of foetal metabolism, evidences of which were also present in other organs."

While coincident maternal systemic disease often occurs with a premature separation, no direct casual relation can actually be assigned to it, except in those rare reported cases which have been already referred to.

Of the local causes, trauma is the most often recorded and also the most important factor. But in spite of the fact that it plays a very large part, separations must often be the result of only the very severe traumas. While exact data as to the pressure or tension necessary to remove a well implanted placenta are lacking, it is, of course, a well known and frequently encountered fact in obstetrical practice; the placenta may be so firmly adherent to the uterine wall that it is dislodged only

with great difficulty and sometimes requires manual removal. It is a common experience to have some trouble in delivering a placenta even when exerting extreme extrauterine pressure by the method of Crede. Such pressure, if exerted previous to labor, would lead, no doubt, in many cases to a premature separation. On the contrary, the average traumas during pregnancy are rarely as forceful, and it is therefore unreasonable to presume that they alone are responsible for early detachments.

But in those cases in which the placenta is already extensively damaged by pathological disease, a very slight trauma may be the deciding factor in the separation. Holmes makes the more exact distinction when he enumerates slight trauma plus placental disease as one, and severe trauma as another cause. That severe traumas in the form of accidental or intended violence to the mother from external sources are a common cause is shown by the number of cases reported in which such a history was obtained, especially when post partum examination of the placenta shows no inherent long standing pathological process. Typical of these traumas are kicks, and blows, and in some cases the mechanical over exertion of the mother, especially if she is nearly at full term.

Irregular uterine contractions have been mentioned as a possible source of the detachment. Mechanically this is conceivable, but there are in almost every pregnant uterus some irregularities of uterine contraction, whereby more pressure is exerted in one direction or at one point than at others, but these differences are very slight, and frequently equalized at the placental site by the mere mechanical fact of the presence of the placenta.

Another and more definite cause for detachment may be attributed to those cases in which there is a true or relative abnormally short cord. In such cases separation would not occur until well along in the progress of labor and would not, therefore, lead to serious results to either mother or child if dealt with by a skilled obstetrician.

Also the negative pressure, produced by the sudden evacuation of an acute hydramnios may result in a separation.

To tabulate the causes of the condition under discussion, we may sum up as follows:

Predisposing Causes.

1. Arteriosclerosis.
2. Infarction Uteri.
3. Tumors.
4. Placental Disease.
 1. Fatty and Amyloid degeneration.
 2. Syphilis.
 3. Tuberculosis.
 4. Infarction.
 5. Tumors.

Direct Causes.

1. Trauma.
2. Short Cord.
3. Rapid evacuation of hydramnios.
4. Irregular uterine contractions (possibly).

Types. Placental detachment may be either partial or complete, and of the partial separations, the union with the uterine wall may be broken either centrally or marginally, as regards the placenta.

Which of these types takes place is determined by the causative factors that have occurred in the individual case, and no definite law can be laid down as to which of our series of causes or which combination may lead to any specific type of separation. The clinical course of the condition in its diagnosis, prognosis, and treatment, and the amount and character of the hemorrhage depends upon the anatomical type of the separation, and the obstetrician cannot size up the case and institute appropriate treatment, unless he be aware of the pathological possibilities. The all important fact clinically, is whether the hemorrhage is external or concealed or both.

In pure central detachment of the placenta, the bleeding is always totally concealed, for it does not have access to the uterine cavity, being retained between the placenta and the subjacent uterine wall by the still patent marginal attachment of the placenta. This is one of the most fatal types, if the separated area be large, for the counter pressure exerted even by a large foetus and a large unruptured amniotic sac is not sufficient to act as a mechanical tampon to prevent the escape of the uterine blood from the opened sinuses. The patient may readily bleed to death in this way, if the condition is not discovered and the uterus promptly emptied. On the other hand, if the central separation be small, and if labor is at hand, no serious loss of blood may follow, although with the increasing hemorrhage

behind the placenta, there is great danger that the resulting pressure will cause a more extensive parting.

Such a result, if carried further, will result in a part of the blood wedging its way out to the edge of the afterbirth, detaching the weakest part of the margin, when the blood will escape into the uterine cavity. This is probably the mechanism by which the second type, marginal separation, is produced, with its accompanying external and visible hemorrhage. In this type we are not dealing with such a serious condition, for, naturally enough, the true state of affairs is discovered early, and remedial measures begun. External hemorrhage does not always result, however, for the blood may be retained by the pressure of the foetal membranes against the uterine wall, and the bleeding continue concealed with all of the symptoms of internal hemorrhage. Or, on the other hand, the free blood may, through its own pressure or that of formed clots, break through the foetal membranes near their attachment to the placenta and escape into and mingle with the amniotic fluid, still being completely concealed, if that portion which presents at the os be still intact.

A third type of detachment is that in which the entire placenta is stripped off of its uterine attachment, leaving all of the sinuses open. Under such conditions one would expect at least some visible hemorrhage, especially if the membranes have ruptured. Often there is, but there is just as often the added factor of the prolapse of the loose placenta which, falling over the internal os, acts as a cover, and the blood behind is thereby retained.

Naturally enough, the rapidly collecting blood tends by its ever increasing pressure more and more firmly to impact the placenta in its abnormal position. Of course in such case, the child dies promptly, and the mother's life is in imminent danger.

Not only may the hemorrhage be external and visible, or internal and concealed, but a combination of both may occur in which a part of the blood escapes into the vagina and a part remains behind, collecting and increasing in amount. It is therefore a fallacy to judge as to the treatment of the case by the amount of hemorrhage that is observed upon examination. This combination of both external and internal hemorrhage may result from a partial separa-

tion provided that it involves the margin of placental attachment. Strictly central separations never lead to external hemorrhage.

Clinical Course. The clinical course of the condition under discussion may be described as follows: The onset is always abrupt, and sharply demarcated from the previous condition of the patient, whether or not she has normally begun labor. If labor has not already begun, it is suddenly and stormily begun by extremely sharp rending pains much more severe than usual, and the multiparous patient will often volunteer the remark that she has never experienced such severe early labor pains. They simulate more the pains of the latter part of the second stage, but are rather more irregular. The intervals are much shorter than one would expect. The patient is suddenly changed in her attitude of fortitude to one of anxiety, and is in the most agonizing labor. Even though she has previously begun labor the change is just as marked, and while apt to be mistaken for the onset of the second stage, a keen observer will notice the abnormal intensity of labor. Vaginal examination, too, will put the attendant on his guard, for the amount of dilatation of the os and effacement of the cervix is far less than would be expected from an observation of the character of the uterine contractions, both subjective and objective.

This characteristic onset is a very valuable diagnostic point, and so striking as to be almost unmistakable. At any rate, it should serve to put the obstetrician on his guard and stimulate him to look for further evidence of a premature placental separation, especially if corroborated by the relatively slight dilatation, and apparently slow progress.

Along with the generally tumultuous labor pains there are exacerbations of excruciating pain of a colicky character lasting from a few seconds to two or three minutes. Sometimes there is localized pain, and if present, it is most likely to be at a point where tender asymmetry is observed in the abdominal tumor. This point of asymmetry while not definite or of itself pathognomonic of the condition, may usually be found upon careful observation, and palpation over it will elicit a boggy-like feeling, giving the sensation of a spongy mass, gradually shading off to the firmer consistence of the surrounding abdominal wall. The general feel of the abdomen is one of extreme tenseness,—much

more so than that of the normal belly of the full term pregnant patient.

The patient herself may subjectively feel an increasing distention, with or without a great increase followed by a great decrease of foetal motion. As labor progresses one's attention is drawn to the restlessness of the patient. She gives the impression of impatience for labor to terminate and seems to be fearful of the result, with a sense of impending disaster. Vertigo and syncope follow. She is nauseated and vomits. Gradually the symptoms and signs of hemorrhage and its associated shock supervene, depending on the extent and severity of the bleeding. There may be precordial distress, air hunger, and abnormal thirst, going on to drowsiness and coma, and finally death. One can judge somewhat of the extent of the hemorrhage by the tension and rapidity of the pulse, and the old rule holds that when the hemorrhage is serious the pulse is affected. In the end, the whole picture is one of internal concealed hemorrhage combined with that of collapse.

The picture described is much the same whether or not there is visible hemorrhage, but the latter naturally facilitates the diagnosis and therefore the prognosis and treatment.

Diagnosis. The diagnosis of premature detachment of the placenta is of course of vital importance to both mother and child and is one of the cases where inaccurate observation, careless examination, or general lack of interest may easily lead to a fatal result to both. The condition can be easily overlooked in its early stages if the bleeding is entirely concealed and the diagnosis not made until too late. In such a case, the danger signals which stand out preëminently are: 1. A history of trauma plus the statements of the mother as to the onset of labor, and her subjective sensations regarding foetal motion and viability; 2. the physical examination, showing a large tense abdominal wall with asymmetry and localized tenderness, coupled with a boggy sensation on palpation; 3. the stormy character of the labor; 4. the signs of hemorrhage, especially the pulse rate; and 5. the gradual rising of the height of the fundus of the uterus. With these symptoms and signs, especially if grouped, one's suspicions should be enough aroused to find the precise cause.

If hemorrhage antepartum is visibly present, a positive diagnosis can be made by ruling out

placenta previa and rupture of the uterus, by examination,—the only conditions to be confused. Rupture occurs during labor. Placenta previa rarely shows signs before the onset of labor. Premature detachment occurs during pregnancy and initiates labor. In rupture of the uterus, no presenting part is felt, the uterus no longer contracts, and often the rent itself can be felt bimanually, and occasionally the child and uterus can be felt as separate entities. Placenta previa is not present if there be no antepartum hemorrhage, and is easily felt either partly or totally encroaching on the internal os.

In cases where there is no visible bleeding, the diagnosis is more difficult, for here we have the added factors of the many acute abdominal conditions met with surgically, such as local or general peritonitis, from any of their causes, abdominal and pelvic inflammatory conditions, tumors, especially ovarian cyst with twisted pedicle, renal calculi, and even pancreatitis, cholecystitis, and referred pain of pneumonia.

In the differential diagnosis of such conditions an accurate and complete history is very essential, and upon that alone the choice may be made in most cases. Complete and thorough physical examination, with all the appropriate laboratory methods, is ideally desirable, but often impracticable from the very nature of the emergency. However, the fact remains that no pains should be spared, often with the aid of a competent consultant, to make an early and prompt diagnosis.

Acute hydramnios might sometimes be confused with placental detachment, but the former occurs to give symptoms earlier in pregnancy, often before pregnancy is even positively diagnosed. Hydramnios does not give the symptoms of hemorrhage, rather those of shock.

Prognosis. The prognosis is of course always much worse for the child than for the mother. Some writers go so far as to say that for the baby it is absolutely bad, but that depends upon the time and extent of the separation. In cases of complete detachment, the chances of birth of a viable child are practically nil, for in spite of a fortunate early diagnosis, and rapid delivery, the foetal circulation must of necessity be cut off for a sufficient time to produce death. The mother's chances, too, are poor in such case, for there is a very large area of bleeding surface exposed, and brisk hemor-

rhage is apt to go on without adequate clotting, until mechanical methods of control can be instituted. If, on the other hand, the placental separation is slight, and especially when the bleeding is visible, the chances of life and recovery are good for the mother, though still dubious for the child. Here, of course, we have the added factor in determining prognosis, that being the condition of the cervix. Should the lesion occur before term, or before active labor has taken place, the difficulty of operatively dilating a rigid cervix will be unfavorable regarding the outcome to mother and child, but if labor is already well along and the dilatation considerable, the prognosis is proportionately better. It frequently happens that, at the very last minute of the second stage, the presence of a short or badly twisted cord will literally tear the placenta from its attachment. Birth being at hand, the prognosis for the child is perfectly good, and that for the mother not necessarily serious or troublesome. Clinically it amounts simply to a shortened third stage.

The fact should not be forgotten that there may be no visible hemorrhage, perhaps even a slight detachment, but a long continued ooze will have the same fatal result. Also, resulting anemia from any obstetrical hemorrhage is a marked predisposing cause for infection.

Prophylaxis. An understanding of the causes of this condition gives us a clue to the prophylactic measures which will lead to its prevention. Chief among these controllable factors to avoid is therefore trauma, either slight or severe. This includes the trauma from over-exertion on the part of the mother as well as avoiding those amusements and occupations which may lead to personal injury. An understanding and interest on the part of the attendant in insisting upon the proper hygiene of pregnancy is naturally the best prophylaxis. Too great emphasis cannot be placed on the importance of the avoidance of coitus during pregnancy. More and more are we coming to realize that this is a powerful cause in predisposing to pathological labor. It should be the rule of serious obstetrics to emphasize the avoidance of this danger.

Treatment. Whenever premature detachment of the placenta is diagnosed, it is a situation that demands active measures of treatment. That means as rapid delivery of the patient as is consistent with her condition and environment. In order to accomplish this there must

usually be some sort of operative interference, and here is where sane judgment is so important. Naturally, excluding other factors, the average operator will select those methods in which he is most skillful. Generally the operation of choice is manual dilatation of the cervix followed either by high forceps, or version and breech extraction. Manual dilatation means shock, and methods of combating it must be at hand, and naturally the dilatation should be slow, and careful to minimize as far as possible the shock. High forceps is not only difficult but always dangerous, even in the most skilled hands, whereas version has the same characteristics.

Should a positive diagnosis of foetal death be made, a destructive operation would probably give the best results in saving the mother.

Caesarian section, while theoretically an appropriate way out of the difficulty, is, in these cases, contraindicated. The patient who is bleeding, anemic, and in more or less shock, is a poor operative risk, to say nothing of the fact that previous vaginal examination should prevent Caesarian section on account of the great danger of infection.

Slow dilatation of the cervix with the Voorhees bag, is a relatively safe but slow method. I do not favor it in any case where there is hemorrhage, because one is inclined to get an impression of false security from the fact that, after introduction of the bag, bleeding is no longer visible.

Simple rupture of the membranes may facilitate and hasten labor if the cervix is well dilated, but the rapid evacuation of amniotic fluid may result in a further loosening of the placenta. Of course where the cervix is already well dilated, operative and rapid delivery is easy and relatively safe.

Any method of relatively rapid delivery is then the appropriate treatment, after the method which under the individual circumstances seems wisest and safest, but a word of warning is not inappropos to the effect that here is one of the many cases where one must treat the patient, not the disease. Oftentimes it would be advisable to react the mother from shock, give stimulants, and intravenous salt solution, or better, transfusion previous to any operative method. In nine cases out of ten the child's life is already or must be sacrificed in order to save the mother.

Whatever the immediate treatment, one must

provide for the supplementary treatment after delivery. If born alive, the baby will be in pallid asphyxia, and very strenuous measures should be at hand for resuscitation. That means that a skilled consultant is almost a necessity, for one must simultaneously care for the mother, who may be in shock, or may have a fatal post partum hemorrhage. Post partum bleeding is common in these cases, and will frequently require packing of the uterus, for one must remember that there must already have been considerable loss of blood, and only a few ounces unnecessarily lost after birth, may turn the balance against the mother's recovery.

Conclusion. In conclusion, may I emphasize again the seriousness of the condition and the necessity for its recognition.

Premature detachment of the placenta stands out as an all-important cause of both foetal and maternal mortality in childbirth, and it is probable that it occurs much more often than we suppose. Progress is made in recognizing and eliminating such dangers and in aiding nature safely to consummate what should be a normal physiological process.

It is the accurate knowledge of such conditions as I have attempted to describe, coupled with prompt diagnosis and sane treatment, usually with adequate help, that will materially aid in the advancement of the art of obstetrical practice.

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Book Reviews.

The Principles of Mental Hygiene. By WILLIAM A. WHITE, M.D. 12 mo. pp. 323. The Macmillan Co., New York, 1917. Price, \$2.00.

The author proceeds to discuss the mental factors which have to do largely with social relations. The effects upon character of the interplay between the developments of the individual and the developments of society are discussed. The nature of emotional reactions to various problems are interestingly handled in such portions of the book as those on the treat-

ment of crime, and criminals, the scapegoat, and in regard to other aspects are taken up and contrasted with the intellectual type of reactions of civilized man. There is outlined the struggle of the individual between the same emotional and intellectual reactions in our complex modern social life, and the outlines of the bearings of these struggles upon mental disease, and some of the psychoneuroses.

The book is one of a clear and forceful writer, well acquainted with his subject, and is stimulating and suggestive and helpful to the thoughtful reader, even though one cannot follow the author in all details of his applications of the principles he describes.

Rest, Suggestion, and other Therapeutic Measures in Nervous and Mental Diseases. By FRANCIS X. DERCUM, A.M., M.D., Ph.D. 2nd Edition. Philadelphia: P. Blakiston's Son & Co. 1917.

The great experience of the author of this book and the simple and lucid style makes it one of the most readable books and one of the most useful that we have. The description of the use of the rest treatment for the various forms of mental and nervous diseases in which it is of advantage is particularly full and adequate, with careful attention to details, many of which are so often neglected, and the same is true of the treatment of the various methods of suggestion in their application, which in the case of the neurosis is of so much importance in the use of the rest treatment.

The handling of the treatment of the various mental diseases is also admirable, and we note with pleasure the introduction of some of the most recent methods, as, for instance, in the treatment of delirium tremens of Hogan's method of the use of hypertonic and glucose injections given intravenously.

The third part of the book, which treats of suggestion, takes up the subject very fully and adequately. The chapter on the mystic and religious methods of healing is both interesting and fair, both in the description of various forms in the past, as mesmerism, and also of those of the present day. The description of hypnotism, and the conclusions as to its usefulness are clear and convincing. Most neurologists of experience agree with the author that its field as a method of cure is very limited, as distinguished from its use as a means of investigation, or for the rapid relief from some particularly troublesome symptom.

The discussion of the method of psychoanalysis is quite complete, and the exaggerated claims of the followers of this form of pseudo-psychology in regard to its applicability to all fields of knowledge are well set forth in their proper light, and the warning of the possible evil effects of this method of treatment of the psychoneuroses is not amiss.

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A NEW ASPECT OF THE MEDICOLEGAL SITUATION.

PROBABLY the medical profession is the most imposed upon and the least protected by law of all vocations. That this is a well known fact to the public at large is attested by the extraordinary growth in the number of cases for malpractice that are on the docket. A prominent attorney, in speaking on this subject recently, stated that in a period of ten years suits against doctors increased from two thousand to nearly ten thousand. Even our own code of regulations is so indefinite that we hesitate or procrastinate in punishment of unprofessional conduct.

The profession not only lacks suitable defensive legislation, but it literally encourages action against it by the frank and artless manner in which it conducts its business. No group of men so freely expose their weaknesses and mistakes, their differences of opinion, and encourage out-

side criticism as do the doctors. Their daily doings are displayed on the pages of their journals, or divulged in open debate, where anyone can read or hear them. It has even been argued that it is dishonest for them to insure against blackmail.

Some of our venerable and far seeing leaders reason that our weakness is our strength. This may be true; but sometimes the most philosophical amongst us become cynical of our idealism, when we cogitate on our comparative helplessness against those who would prey upon us.

There has recently come to light what is perhaps an entirely new form of spoliation. In character it is subtle and wicked, for its success depends upon the utilization of some misfortune that happens to overtake the victim. Within the month there has been mailed to physicians by an insurance firm a blatant communication, consisting of a circular letter and a reprint of a newspaper article which reports the trial and the verdict against a doctor, and gives the physician's name. The circular goes on to state that all doctors should have liability insurance, and that the accompanying newspaper clipping is proof of the wisdom of this advice. It is difficult to understand how any doctor could deal with such a firm when it undertakes to capitalize its business by exploiting and sending broadcast through the mails the misfortunes of one who is a member of the profession. Deceit of the commonest form would have prompted the firm to omit names. In an effort to build up its business, the company either never thought, probably didn't care, that they were adding injury to the doctor by accentuating his ill luck. Such advertising methods, as seen in this instance, are a gross prostitution of commercial ethics.

We can hurl at the insurance agents deprecation, or ridicule, or protest, but that is all the redress the doctors can obtain. Or it may even be wiser to say nothing, and simply smother the pent up feelings. The profession might retort by resorting to the "We do not patronize" of the labor union; but the loose organization, or want of fraternalism among doctors, would defeat any attempt to boycott. Prevention and retaliation are not possible. We are helpless.

To be always on the defense and never able to attack, is intolerable, but it is the only alternative we have under the present state of the medical profession. The "changing order of

things," with its social reconstruction, may bring relief through unionization of the medical profession—a movement already afoot in Great Britain, and dimly discerned on the American horizon. In the meantime, let us find solace in the Hippocratic oath.

SPHAGNUM MOSS.

WITH the entrance of the United States into the world war and the consequent expectant results of battle, it became necessary for the medical service to plan for conservation of supplies. A shortage of cotton, one of the chief essentials in the making of surgical dressings, had forced the Allied medical service to use sphagnum moss as a substitute. At first there was a diversity of opinion among American surgeons as to the efficacy of these dressings, but during the various campaigns on the Allied fronts in France, Malta, Alexandria, Salonika, Italy, Palestine, and in the hospitals of Great Britain as well, the success of sphagnum had proved its worth both financially and surgically.

This moss is widely distributed throughout the world, especially in damp climates. The supply for Great Britain was gathered chiefly from the moors of Scotland, Ireland, and Canada and the United States drew her supply from along the Northern Atlantic, Nova Scotia, and Newfoundland and from the coast of Oregon and Alaska. Before the outbreak of the war, sphagnum had been used in a variety of ways,—as a fertilizer, in the making of the coarser kinds of paper, for packing and shipping fruit, and for medical purposes. It was employed during the Napoleonic and Franco-Prussian wars and to a limited extent in the Russo-Japanese war.

Great care should be exercised in the collection of sphagnum moss and in differentiating between the various species. The surgical pads made from the moss were prepared in various ways, according to the requisites of the medical service of the several countries; and it has been estimated that if cotton were used exclusively in the hospitals, the cost would be not less than \$200,000 per annum for Great Britain alone. The cost of the moss is practically negligible.

The value of sphagnum as a surgical dressing is manifold. Financially it is an immense saving to the cost of hospital supplies; it will ab-

sorb 10 to 20 times its weight of water; it does not have to be subjected to any special treatment except that of sterilization; it is abundant in almost every country, and its usefulness is constantly being improved upon. Modern hospitals will now doubtless add this natural product to their list of supplies; and instead of being looked upon as an emergency makeshift, sphagnum will have won for itself a place among commercial products.

WORK OF THE RECONSTRUCTION HOSPITALS.

WITH the cessation of hostilities and the return to this country of disabled men, the progress made by the Reconstruction Division of the Medical Department of the United States Army has been most satisfactory. Detailed reports from the Surgeon-General's office, authorized for publication by the War Department, tell us of the efforts to restore men to usefulness. From the simple "ward occupations" many patients have progressed to the point where they can be instructed in shops and schools. The following courses have proved popular with the men and in a large measure successful in alleviating much of the discouragement incident to the patient's disability: shorthand and typewriting, printing, business, agriculture, gardening, telegraphy, carpentry and bench work, telephone, furniture repairing, painting, and electrical work; and some of the men have become interested in the following trades: blacksmith, concrete work, brick-laying, plumbing, commercial law, printing, shoe repairing, woodwork, sign painting, cabinet work, cartooning, drawing, bookbinding, and willow work.

Records of many hundreds of cases treated in these reconstruction hospitals show that the task is an extensive one and that the need for training men to earn a livelihood under adverse conditions of physical fitness is most important. The policy of the hospitals is that no man disabled in line of duty shall be discharged from the service until he shall have attained as complete a recovery as may be expected after taking into consideration the nature of his disabilities. Close coöperation is maintained between the War Department Committee on Education and the Federal Board for Vocational Education, which is authorized by law to provide vocational train-

ing for disabled men after their discharge from the service. The following hospitals, where all methods recognized by modern medicine will be used in promoting cure, have been designated by the Surgeon-General for the work of physical reconstruction:

Walter Reed General Hospital, Washington, D. C.

General Hospital No. 2, Fort McHenry, Md.

General Hospital No. 3, Colonia, N. J.

General Hospital No. 4, Fort McPherson, Ga.

General Hospital No. 7, Roland Park, Baltimore (for the blind).

General Hospital No. 8, Otisville, N. Y.

General Hospital No. 4, Fort Porter, N. Y.

General Hospital No. 9, Lakewood, N. J.

General Hospital No. 11, Cape May, N. J.

General Hospital No. 16, New Haven, Conn.

General Hospital No. 17, Markleton, Pa.

Letterman General Hospital, San Francisco, Calif.

United States Army Hospital, Fort Des Moines, Iowa.

Plattsburg Barracks Hospital, Plattsburg Barracks, N. Y.

General Hospital, Fort Bayard, N. Mex.

DR. JOHN HALL.

An account of the life of Dr. John Hall, Shakespeare's son-in-law, was recently read before the New York Academy of Medicine. This man, who practised without a medical degree, married Shakespeare's elder daughter, Susanna, in 1607. Because of his affiliation with the illustrious poet, much has come to light concerning his treatments and cures. Dr. Hall attended many famous people related to and well known by William Shakespeare and it has been suggested that it was he who prescribed for the poet in his last illness. During the nine years or more in which he was known to Shakespeare, it is believed that Dr. Hall acquainted his father-in-law with a great deal of medical knowledge. In favor of this point of view, it is interesting to note that most of Shakespeare's reference to medical subjects is to be found in the tragedies written toward the latter part of his life. Dr. Hall kept a case-book in Latin which was later translated and published and proved very popular reading among the laity.

Cases of various kinds were described, and their treatment outlined by an extensive *materia medica*. The popularity of this book brought to the attention of the general public a man who would otherwise undoubtedly have passed into oblivion with his generation. A brief account of the poet's illness and death on April 23, 1616, is contained in this case-book. After Shakespeare's death Dr. Hall was made executor of the estate and it is thought that he may have been to blame for the loss of many of the manuscripts of plays. Dr. Hall died at Stratford-on-Avon in 1635 at the age of sixty.

MEDICAL NOTES.

STUDY OF NUTRITION IN GERMANY.—A recent dispatch from Christiania states that a commission to study the present state of nutrition in Germany and Austria has been requested by a number of German and Austrian universities. Sweden, Denmark, Holland, Switzerland, and Spain, and possibly America, will be represented. The Swedish representatives are Professors Johansson and Gadelius.

UNITED STATES GENERAL HOSPITAL AT ST. LOUIS.—United States General Hospital No. 40 has been opened in St. Louis, and several hundred wounded soldiers are now being treated there. The hospital has facilities for the accommodation of over nine hundred and seventy patients. There are at the hospital a staff of forty doctors of the medical service of the army, one hundred nurses, and about two hundred enlisted men from the medical branch of the service.

TYPHUS IN HERZEGOVINA.—The American Red Cross has sent several doctors and nurses to Herzegovina with a large quantity of medicines and clothing to care for the sick and wounded soldiers returned from Austria and many civilians suffering from typhus. Many patients were found dying of septic wounds and poor medical attendance. In some cases, paper surgical dressings were being used; in others, old dressings, unwashed and unsterilized, were employed.

The Red Cross mission, which is under the direction of Captain F. C. Thwaits of Milwaukee, Wisconsin, has established relief stations at Ragusa, Spalato, Sarajevo, Mostar, and other

points. Sanitary methods are being improved in order to prevent the spread of typhus.

REORGANIZATION OF HOSPITAL FACILITIES.—The rapid demobilization of military forces has made it possible to reorganize army hospital facilities. A total reduction of 5500 beds at various camp hospitals has been ordered by the Surgeon General. Nine hospitals to be reserved for the public health service to be used for the treatment of war risk insurance beneficiaries include the hospitals at Camps Beauregard, La.; Cody, N. M.; Fremont, Calif.; Hancock, Ga.; Joseph E. Johnson, Fla., and Logan, Tex.; General Hospital 13, Danville, N. Y.; General Hospital 15, Corpus Christie, Tex., and Emergency Hospital 4, New York City. The base hospital at Camp Sevier will be transferred to the health service.

The Lakewood, N. J., institution is to be abandoned before June 1. Preparations already are under way to close the hospitals at Hot Springs, N. C.; Madison Barracks, N. Y.; Long Beach, N. Y.; Grand Central Palace, New York City; Richmond, Va.; and at the Rockefeller Institute, New York City.

GIFT OF \$12,000 TO STANFORD UNIVERSITY MEDICAL SCHOOL.—A gift of \$12,000 has been given by Mr. and Mrs. William Fitzhugh to the medical school of Stanford University, for the purchase of one gram of radium for use in the actinography department of the University Hospital. The net income will be devoted to clinic beds for the use of indigent patients, especially those who have need of either x-ray or radium treatment.

TOTAL DEATHS IN AMERICAN EXPEDITIONARY FORCES.—The United States War Department has announced that deaths in the American Expeditionary Forces and among troops in the United States from all causes numbered 107,444. In the Expeditionary Forces the total was 72,951. Of these, 20,829 were caused by disease, 48,768 by injuries in battle, while 3,354 resulted from other causes. The deaths from disease amounted in all to 32,737 and from other causes to 1,756, making a total of 34,493. The deaths from disease exceeded the battle casualties by 5,000.

VIRGINIA TUBERCULOSIS SANATORIUM.—The third Tuberculosis Sanatorium of the Virginia

State Board of Health, to be situated at Charlottesville, is now being designed. The State Board of Health will affiliate with the Medical School of the University of Virginia in conducting this institution. It is planned to have students from the school and the nurses from the University Hospital Training School have regular periods of service in the sanatorium, which will open, with one hundred beds or more, in the autumn.

NATIONAL ASSOCIATION FOR THE STUDY OF TUBERCULOSIS.—A fund of \$10,000 has been granted to the National Association for the Study of Tuberculosis for making an exhaustive scientific study in Baltimore of the underlying causes of tuberculosis. This grant will defray expenses of investigation and study for one year, and the work will be begun as soon as investigators can be organized. Although the city of Baltimore appropriates annually the sum of \$30,000 to the health department for its tuberculosis work, it has not been possible to carry the investigation far enough to make the progress as definite as officials hope may be possible.

The following men are included in the committee of investigations: Dr. Henry Barton Jacobs, Baltimore, president of the Maryland Association for the Study and Prevention of Tuberculosis; Dr. Raymond Pearl, professor of biometry and vital statistics in the School of Hygiene and Public Health, Johns Hopkins University, and Dr. William T. Howard, Baltimore, assistant commissioner of health.

NEW YORK CLINIC FOR DRUG ADDICTS.—A clinic to be known as The Narcotic Relief Station has been established in Manhattan for the free treatment of drug addicts. Such drugs as may be deemed necessary by the consulting physician will be administered. Practically all of the patients who have applied to the Relief Station have been heroin or morphine addicts; many have stated that they have been taking from forty to sixty grains a day. The plan of treatment adopted by the New York Health Department makes a reduction daily of one-twenty-oneth of the amount taken. Hospital care for those who require it has been provided for in the Riverside Hospital on North Brother Island.

A total number of 1403 patients addicted to drugs has been given treatment. Of these, fourteen per cent. were colored, eighty per cent.

were between the ages of twenty and thirty years, and eighty-one per cent. were males. The cause of the initial use of drugs was found to be in twenty-one per cent. of cases illness or the relief of pain; the remaining seventy-nine per cent. probably adopted the habit merely through association with evil companions. Heroin was the only drug taken in sixty-nine per cent. of the cases, morphine in thirteen per cent., and cocaine in the case of four patients. All except seventy-three patients had been using drugs for over two years.

INFANT MORTALITY RATE IN NEW YORK CITY.—The City of New York had the lowest mortality rate of the ten largest cities in the United States during 1918. The rate per thousand births reported was 91.7.

INFLUENZA AMONG AMERICAN INDIANS.—During the period from October 1, 1918, to March 13, 1919, there were reported 73,651 cases of influenza, with 6,270 deaths, among American Indians. These figures indicate that the epidemic was extremely severe among the Indians, with a mortality rate during a six months' period of 41.2 per thousand, which is about four times as high as that for the larger cities in the United States during the same epidemic period.

RED CROSS RELIEF WORK IN EASTERN EUROPE.—The distress of the people of Poland, Lithuania, the Balkans, and in all the countries east of the former Central Empires, has been emphasized by Dr. Livingston Farrand, who has recently returned from Europe. He has expressed the belief that the present conditions will become aggravated during the coming year, making greater relief work a vital necessity, and urges that the appeal which will be made next fall by the American Red Cross for additional funds will be wholeheartedly supported by the American people.

TORONTO UNIVERSITY MEDICAL SCHOOL.—The department of medicine of the University of Toronto has received a gift of \$25,000 for a period of twenty-five years for providing for a full-time clinician in the medical department and a half-time clinician in pediatrics.

APPOINTMENT OF SIR ARTHUR NEWSHOLME, K.C.B.—Sir Arthur Newsholme, K.C.B., has been appointed to the chair of hygiene in the new school of public health of the Johns Hopkins Medical School for the year 1919-1920.

WARNING AGAINST SHAVING BRUSHES.—A warning has been issued against the use of shaving brushes which may possibly contain material contaminated with anthrax. Cases of this disease are continually appearing and it is probable that there are still infected brushes which will be sold. It has been advised that brushes that do not bear the name or trademark of the manufacturer be regarded with suspicion and returned. The following recommendation has been issued by the surgeon-general.

"The brush should be soaked for four hours in a 10 per cent. solution of formalin (40 per cent. solution of formaldehyde). The solution should be kept at a temperature of 110 degrees Fahrenheit and the brush so agitated as to bring the solution into contact with all hair and bristles."

Druggists, barbers, and storekeepers handling brushes are urged to heed this warning in the interest of their patrons.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The Eleventh Triennial Session of the Congress of American Physicians and Surgeons was held in Atlantic City on June 16 and 17, 1919. "Surgical Aspects of Reconstruction" was the subject of the first session, and the following papers were read and discussed:

"The Surgical Aspects of Reconstruction," by Dr. John M. T. Finney; "The Neurological Aspects of Reconstruction," by Dr. Harvey Cushing; and "The Orthopedic Aspects of Reconstruction," by Dr. Joel E. Goldthwait. In the evening, Simon Flexner, M.D., President of the Congress, addressed the members on the subject "Epidemiology and Recent Epidemics."

At the meeting on June 17, "Medical and Neurological Aspects of Reconstruction" was the subject considered. Dr. W. S. Thayer discussed "The Medical Aspects of Reconstruction;" Dr. A. E. Cohn, "The Cardiac Phase of War Neuroses;" Dr. Pearce Bailey, "Neuro-Psychiatry and Reconstruction;" and "The Physical and Mental Rehabilitation of Disabled Soldiers of the United States Army."

The following component Associations and Societies held meetings on June 14, 15, 16, 17, and 18: The American Ophthalmological Society, American Otological Society, American Neurological Association, American Gynecological Association, American Dermatological Association, American Laryngological Association, American Surgical Association, American Climatological and Clinical Association, Association of American Physicians, American Association of Genito-Urinary Surgeons, American Orthopedic Association, American Pediatric Society, American Association of Pathologists and Bacteriologists, and the American Society of Tropical Medicine.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 31, 1919, the number of deaths reported was 203, against 188 last year, with a rate of 13.29, against 12.49 last year. There were 33 deaths under one year of age, against 33 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 58; measles, 20; whooping cough, 11; typhoid fever, 1; tuberculosis, 36.

Included in the above, were the following cases of non-residents: Diphtheria, 2; scarlet fever, 4; typhoid fever, 1; tuberculosis, 7.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 1; whooping cough, 2; typhoid fever, 2; tuberculosis, 21.

Included in the above, were the following non-residents: Scarlet fever, 16; typhoid fever, 1; tuberculosis, 2.

Influenza cases, 12; influenza deaths, 3.

ADMISSION OF DR. WOODWARD TO MASSACHUSETTS BAR.—Dr. William C. Woodward, Health Commissioner of Boston, has been admitted to the Massachusetts bar. While acting as health commissioner in the city of Washington, Dr. Woodward passed the examinations and was admitted to practice in the courts of the District of Columbia.

TUBERCULOSIS HOSPITAL AT HANSON.—At a recent meeting of the Plymouth County Commissioners, it was voted to hold the formal opening of the Tuberculosis Hospital at Hanson on May 24. Dr. Bradford H. Pierce of Cambridge

will serve as physician in charge of the institution.

BOSTON UNIVERSITY SCHOOL OF MEDICINE.—At the annual meeting of the Alumni Association of the Boston University School of Medicine held in Boston on June 2, President Nelson M. Wood, M.D., outlined his plans for changing the system of teaching from the homeopathic to the allopathic school, to go into effect at the opening of the college year in the fall.

Among the other speakers were Major Wesley T. Lee, M.C., U.S.A., who addressed the meeting on "Impressions of the War," and Captain Cooper of the British recruiting service.

The following officers were elected for the coming year: Dr. M. A. Leavitt, president; Dr. A. S. Briggs, vice-president; Dr. C. W. Clark, Newton, secretary; and Dr. Howard Moore, treasurer.

HARVARD INFANTILE PARALYSIS COMMISSION FUND.—The funds of the Harvard Infantile Paralysis Commission is reported to have reached a total amount of \$40,253.63.

Obituaries.

FREEMAN DODD BOSWORTH, M.D.

Dr. Freeman Dodd Bosworth, who died at the Lancaster Hospital, on Lancaster Terrace in Brookline, June 2, 1919, had been active in the practice of his profession, as a physician, since his college days, despite the fact that all that time he had been in poor health. He was born forty-three years ago in Washington, D. C., and was the son of the late Freeman D. Bosworth. Following his graduation, *cum laude*, from Harvard, in 1901, Dr. Bosworth attended the Harvard Medical School, from which he was graduated in 1906. He had been connected with the Robert B. Brigham Hospital, as well as the Psychopathic Hospital, and he served as examining physician for the Boston Society for the Care of Girls. He was a founder of Lancaster Hospital, several years ago, and since had been actively identified with that institution. In the active days of the war, Dr. Bosworth was in

Government service, training aids in reconstruction work. While in college he was a leader in the promotion of the Harvard Illustrated Magazine. He was a bachelor and is survived by a sister, Mrs. Harriet Leatherbee, of West Roxbury.

Joining the Massachusetts Medical Society in 1906 he allowed his membership to lapse in 1913 because of poor health. He was restored by action of the Council as of February 5, 1919.

OSCAR FITZALLAN SWASEY, M.D.

Dr. Oscar Fitzallan Swasey, the oldest graduate of Bowdoin Medical School, died June 4, 1919, at his home, 24 Hale street, Beverly. He was born in Danville, Vt., on Dec. 25, 1826, the son of Parker and Anna (Bunker) Swasey, and was educated in the Danville schools and at Peacham Academy, before going to the Bowdoin Medical School, where he was graduated in 1853. He practised for one year in Essex, then moved to Seabrook, N. H., where he married Miss Mary Philbrick on July 25, 1855. The following March they moved to Beverly, where for twenty-five years Dr. Swasey served as a member of the school committee. He had been also city physician and an active member of the Beverly Hospital staff.

Dr. Swasey belonged to Liberty Lodge, A. F. and A. M.; Bass River Lodge of Odd Fellows, the Beverly Improvement Society, Essex South District Medical Society, the Society for the Preservation of New England Antiquities; and he was a trustee of the Fisher Charitable Society, of Beverly, a member of the Essex Institute for many years, and a member of the American Association for the Advancement of Science. He joined the Massachusetts Medical Society in 1863 and was retired in 1900.

He is survived by three children: Mrs. Clara (Swasey) Woodberry and Miss Marion Swasey, both of Beverly, and George O. Swasey of Tacoma, Wash.

The Massachusetts Medical Society.

ANNUAL MEETING OF THE COUNCIL. JUNE 3, 1919.

THE annual meeting of the Council was held in the foyer of the Copley-Plaza Hotel, Boston, Tuesday, June 3, 1919, at twelve o'clock noon. The President, Dr. Samuel B. Woodward, was in the chair and the following 116 Councilors present:

BARNSTABLE.	NORFOLK (<i>continued</i>).
W. D. Kinney.	E. H. Brigham, Librarian.
J. P. Nickerson, M.N.C.	A. N. Broughton, M.N.C.
BERKSHIRE.	W. L. Burrage, Sec.
Henry Colt.	G. W. Clement.
BRISTOL NORTH.	M. J. Cronin.
W. O. Hewitt.	Samuel Crowell.
F. A. Hubbard, M.N.C.	H. W. Dana.
BRISTOL SOUTH.	W. C. Emery.
E. F. Cody.	C. S. Francis.
W. A. Dolan.	G. W. Kean.
R. W. Jackson.	Bradford Kent.
ESSEX NORTH.	D. T. O'Keefe.
R. V. Baketel, M.N.C.	M. V. Pierce.
I. J. Clarke.	H. H. Powers.
G. E. Kurth.	S. H. Rubin.
F. D. McAllister.	M. V. Safford.
ESSEX SOUTH.	R. D. Schmidt.
W. T. Hopkins, V.-P.	PLYMOUTH.
C. H. Bangs.	W. C. Keith.
H. P. Bennett.	C. E. Lovell.
R. E. Bicknell.	A. E. Paine, M.N.C.
H. K. Foster.	F. J. Ripley.
J. F. Jordan.	F. G. Wheatley.
Emile Poirier.	SUFFOLK.
R. E. Stone.	J. B. Blake, V.-P.
HAMPDEN.	J. L. Ames.
T. S. Bacon.	E. S. Boland.
G. L. Taylor, M.N.C.	F. J. Cotton.
HAMPSHIRE.	J. W. Cummin.
A. G. Minshall.	L. J. Cummins.
MIDDLESEX EAST.	E. G. Cutler.
H. A. Gale.	Lincoln Davis.
E. S. Jack.	C. M. Green, C.
G. N. P. Mead.	G. S. Hill.
MIDDLESEX NORTH.	J. C. Hubbard.
W. B. Jackson.	F. L. Jack.
T. G. Livingston.	D. P. Jones.
J. A. Melan.	F. T. Lord.
M. A. Tishe.	R. W. Lovett, M.N.C.
MIDDLESEX SOUTH.	E. H. Nichols.
H. T. Baldwin, V.-P.	Abner Post.
E. H. Bigelow, C.	Stephen Rushmore.
C. H. Cook.	G. G. Sears.
F. G. Curtis.	G. G. Smith.
D. C. Dow.	P. M. Smith.
A. W. Dudley.	R. M. Smith.
John Duff.	Beth Vincent.
G. W. Gay, Ex-P.	WORCESTER.
C. E. Hills.	W. J. Delahanty, V.-P.
A. A. Jackson.	F. H. Baker.
S. R. Lancaster.	W. P. Bowers, Ex-P.
C. E. Mongan.	M. F. Fallon.
B. M. Peirce.	Homer Gage.
F. W. Rice.	J. O. Gendreau.
W. D. Ruston.	David Harrower.
Godfrey Ryder.	A. G. Hurd.
C. H. Staples.	W. L. Johnson.
E. H. Stevens, M.N.C.	F. H. Washburn.
F. R. Stubbs.	C. D. Wheeler.
G. L. West.	S. B. Woodward, P.
G. W. W. Whiting.	WORCESTER NORTH.
Alfred Worcester.	E. L. Fiske, M.N.C.
NORFOLK.	J. G. Henry.
E. E. Bancroft.	A. P. Mason.
W. H. Bennett.	W. F. Sawyer.
D. N. Blakely.	

The reading of the record of the last meeting was dispensed with by vote. The names of the Nominating Committee were read by the Secretary by districts and the following answered to their names, and the Committee retired:

BARNSTABLE.	MIDDLESEX SOUTH.
J. P. Nickerson.	E. H. Stevens.
BRISTOL NORTH.	NORFOLK.
F. A. Hubbard.	A. N. Broughton.
ESSEX NORTH.	PLYMOUTH.
R. V. Baketel.	A. E. Paine.
ESSEX SOUTH.	SUFFOLK.
E. Poirier.	R. W. Lovett.
HAMPDEN.	WORCESTER.
G. L. Taylor.	D. Harrower.
MIDDLESEX NORTH.	WORCESTER NORTH.
J. A. Mehan.	E. L. Fiske.

Dr. Charles M. Green presented the following report for the Committee on Membership and Finance, and it was accepted and its recommendations adopted by vote.

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellow, who, in 1912, was permitted to retire, under Chapter 1, Section 5, of the By-Laws, be now, under the provision of the same chapter and section of the By-Laws, and on his own request, restored to active Fellowship as of January 1, 1919, and subject, therefore, to the dues of the current year:

Berry, John Cutting, of Worcester.

2. That the following named Fellows be allowed to retire, under the provisions of Chapter 1, Section 5, of the By-Laws:

Doggett, Frederic Fobes, of South Boston.

Greenwood, Sewell Elliot, of Templeton, as of January 1, 1919.

Hammond, William Penn, of Charlestown, as of January 1, 1919, and with remission of the dues of 1918.

Perry, George Lewis, of Athol, as of January 1, 1919.

Phipps, Walter Andros, of Wollaston.

Pope, Emily Frances, of Boston, as of January 1, 1919.

Rand, John William, of Amesbury, as of January 1, 1919.

3. That the following named Fellows be allowed to resign, under the provisions of Chapter 1, Section 7, of the By-Laws:

Cowles, Frank Augustus, of Beverly, on the recommendation of the Committee on Ethics and Discipline.

Golob, Meyer, of New York, as of January 1, 1919.

Hydemann, Martin, of 2757 Euclid Heights Boulevard, Cleveland, Ohio, as of January 1, 1919.

Spaulding, Edith Rogers, formerly of Framingham, now of Stony Brook, as of January 1, 1919, and with remission of dues for 1918.

4. That the following named Fellows be granted remission of dues, under Chapter 1, Section 6, of the By-Laws:

O'Brien, Charles Thomas, of Woburn, for the years 1916, 1917, 1918, and 1919, on account of serious illness.

Khonry, Kamel, of Boston, for the year 1918.

5. That the following named Fellow be deprived of

the privileges of fellowship, under the provisions of Chapter 1, Section 8, of the By-Laws:

Ginn, David Richards, of Dennisport.

6. That the following named Fellows be allowed to change their district membership without change of legal residence, under the provision of Chapter III, Section 3, of the By-Laws:

Jack, Edwin Everett, from Norfolk to Suffolk.

Jantzen, Francis Thomas, from Norfolk to Suffolk.

Little, John Mason, Jr., from Norfolk to Suffolk.

Smith, William David, from Worcester North to Suffolk.

Swift, John Baker, from Norfolk to Suffolk.

Tuttle, George Thomas, from Suffolk to Middlesex South.

For the Committee on Membership and Finance,

CHARLES M. GREEN, *Chairman*.

The report of the Committee on Ethics and Discipline was read by the Secretary and accepted by vote. (See appendix.)

Dr. W. L. Johnson commended the work done by the chairman and Secretary of the Committee on State and National Legislation. He said that they had both given much time to the work, the President especially, and that without his devotion so much would not have been accomplished.

Dr. W. P. Bowers read the report of the Committee on State and National Legislation, and it was accepted by vote. (See appendix.)

The following passage was especially approved by Dr. C. H. Cook, and it, with the summary of the report, is repeated here by request:

STATUS OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF BOSTON.

Several hearings were held by the Committee on Education for the purpose of allowing the College of Physicians and Surgeons of Boston to appear and show cause why the charter issued to this institution should not be revoked. These hearings were a continuation of sessions of the Committee of the previous year and resulted from the recommendations of the Attorney-General that the charter of this college be revoked. This action of the Attorney-General was taken because of the filing of twelve or more sworn statements by students of this college alleging fraud and extortion. Fraud in not providing the instruction advertised in the catalog of the college, and extortion in withholding diplomas and requiring additional money payments after all published requirements had been met.

The committee of the preceding year evidently wished to be lenient and referred action to the next General Court, with the desire to give the college an opportunity to improve its work so that drastic action might not be indicated. So far as seems to be shown there has been no improvement in the quality and quantity of instruction given.

In order to gain first hand information three members of this Committee visited the college. In relating the results of their inspection, the language used by this delegation was neither commendatory or even parliamentary.

This matter has not been decided up to this time. A very pertinent question arises as to whether or not a member of this Society may properly be a supporter of an institution which is discredited by a large majority of the states in the Union, by the Council on Medical Education of the American Medical Association, and about which there is reasonable ground to suspect that the management of its affairs suggests more than inefficiency.

SUMMARY.

An analysis of this report shows that there were twenty-nine (29) bills opposed. Of these, five have been referred to the next General Court, three are yet before the Legislature, eighteen given leave to withdraw, and three definitely rejected. That is, the Legislature has taken the same attitude as your Committee on twenty-one out of twenty-nine in this group.

Of the twenty-six (26) bills approved by this Committee, five have been enacted into law, two have been referred to the next General Court, eleven have been rejected, and eight are still before the Legislature.

This shows that the effort for constructive legislation has not been as successful as it should be.

The Committee which will be elected today may find opportunity to enter upon active duty so far as a few of these bills are concerned and it is hoped will have better success next year.

Dr. E. H. Bigelow presented the report of the Committee on Public Health and it was accepted. (See appendix.)

Dr. C. E. Morgan made the following report for the Committee on Health Insurance and it was accepted. It was voted that the Committee be continued.

REPORT OF THE COMMITTEE ON HEALTH INSURANCE.

The Committee on Health Insurance, because of the fact that no definite legislation affecting the work of this Committee was presented this year, has not been called together. Nevertheless, the appearance of a health insurance bill in the State of New York, and the possibility of the further pushing of such legislation this coming winter, make it seem desirable that the Committee be continued.

ARTHUR K. STONE,
For the Committee.

Dr. W. C. Quinby reported orally for the Committee on the Control of Venereal Diseases. He stated that, as this department had been so well organized by the State Health Commission, it seemed unwise for the Committee to pursue its work further, and he recommended that the Committee be discharged. The report was accepted and it was voted that the Committee be discharged.

The report of the Committee on the Control of Cancer was presented by Dr. R. B. Greenough, and was accepted. (See appendix.)

In accordance with the recommendation of this report, Dr. C. M. Green of the Committee on Membership and Finance stated that his Committee had considered the recommendation, and he moved and it was voted, that a sum not exceeding \$200 be appropriated for mailing of the report to members of the Massachusetts Medical Society in accordance with the recommendation of the Committee.

The following report was read and it was unanimously voted to continue the committee:

REPORT OF THE COMMITTEE ON WORKMEN'S COMPENSATION.

The Committee on Workmen's Compensation has not been called upon for any work this year, as no bills markedly affecting the situation were introduced.

In February, Mr. A. N. Frost of Lawrence, who has acted as legislative counsel for this Committee, went through all bills brought in and reported to the Chairman that only two bills bearing on Workmen's Compensation offered any changes that would interest the Committee. Those changes were not deemed important enough to need opposition, so that the Committee was not called together.

While no work has been done, therefore, this year, the Committee feels that every year attempts will be made to revert to the old methods of handling accidents and that it would be wise for the Committee to be continued. Its machinery is ready for quick action when necessary, and I therefore recommend that such action be taken by the Council.

A. N. BROUGHTON, *Chairman*.

A letter from Dr. E. H. Bradford concerning the Committee on establishing a Chair of Military Medicine in Massachusetts was read by the President, and after discussion it was voted that this Committee be discharged in accordance with the recommendation of the chairman.

Dr. R. M. Smith introduced a motion as follows:

Moved: That the Council of the Massachusetts Medical Society establish a Section on the Diseases of Children, and appoint for the first officers: *Chairman*, John Lovett Morse, M.D., Boston; *Secretary*, J. Herbert Young, M.D., Boston. The motion was adopted by a unanimous vote.

Dr. E. H. Bigelow spoke of the coming Fiftieth Anniversary of the establishment of the Massachusetts State Board of Health, and recommended that the President appoint a Committee, of which the President shall act as chairman, to cooperate with the State Commission of Health in the celebration of this anniversary. The motion being put was adopted, and the President appointed (June 4) the following Committee: Alfred Worcester, E. H. Bigelow, Victor Safford, R. I. Lee, E. F. Cody, and Annie L. Hamilton.

Dr. Homer Gage raised the question of revising the By-Laws and the Code of Ethics of the Society. He stated that, according to past custom, the time had arrived for revision, that the edition of the By-Laws printed in 1913 was exhausted, and that since the last revision there had been made four amendments to the By-Laws, including one entire chapter. He moved that the Chairman appoint a Committee of five to revise the By-Laws and Code of Ethics and report to a subsequent meeting of the Council, and it was so voted. The Chair appointed this Committee: Homer Gage, J. W. Bartol, W. P. Bowers, G. G. Sears, and W. L. Burrage.

The Nominating Committee brought in the following ticket for officers and orator for the year 1920: President, Alfred Worcester, Waltham; Vice-President, Arthur R. Crandell, Taunton; Secretary, Walter L. Burrage, Jamaica Plain; Treasurer, Arthur K. Stone, Framingham Center; Librarian, Edwin H. Brigham, Brookline; Orator, Hugh Cabot, Boston. The President appointed Dr. Cody and Dr. Quinby tellers; proceeding to ballot the ticket was

elected as brought in,—94 ballots being cast, and the officers and orator were declared elected.

The President announced that the Hampshire District Medical Society, having held its annual meeting on May 20, five days after the limit fixed by the By-Laws (Chap. III, Sec. 5), those offices of the Society then filled were consequently declared vacant. He read the names of the officers as nominated by the Hampshire District and they were appointed to fill the vacancies by vote of the Council. (See Proceedings of Society for officers.)

The committees appointed to consider the petitions of R. H. Thompson, P. P. McGann and P. F. Ela for restoration to fellowship reported, favoring their restoration under the conditions specified in each report. The committees' reports were accepted severally by the Council and their recommendations adopted.

The following petitions for restoration were received and committees appointed to consider them respectively as follows:

George D. McGauran; Committee, R. C. Hurd, E. H. Noyes, R. L. Toppan.
James J. Hoban; Committee, E. M. Murphy, F. P. Murphy, F. E. Varney.
H. P. Blodgett; Committee, A. P. Mason, H. P. Hall, A. A. Wheeler.
Ralph C. Fish; Committee, A. C. Getchell, L. C. Miller, C. A. Sparrow.
George J. Connor; Committee, C. E. Durant, J. F. Croston, F. W. Anthony.
John J. Maney; Committee, W. H. Merrill, V. A. Reed, J. Parr.
John A. Carroll; Committee, Joseph Cogan, J. T. Bottomley, A. R. Kimpton.
Nicholas M. Crofts; Committee, W. E. Brown, F. D. Stafford, G. H. Thompson.

H. W. Dana spoke of the prolonged illness of his friend, Freeman Dodd Bosworth, who became a fellow of the Society in 1906 and because of poor health had allowed his membership to lapse in 1913. Dr. Bosworth had presented a petition for restoration to the privileges of fellowship and Dr. Dana moved that he be restored to fellowship as of February 5, 1919, and it was so voted.

Dr. Broughton spoke of the efficient work done by the Committee on State and National Legislation and introduced the following resolution, which was passed unanimously:

Resolved:—That the Chairman of the Legislative Committee of the Massachusetts Medical Society be requested to cooperate with the Legislative Committee of the Homeopathic Medical Society in such a manner that all legislative matters shall be supported in committee hearing, and elsewhere if desirable, by the two committees acting jointly rather than separately.

Dr. G. W. Gay said:

It is nearly sixty years since a member of The Massachusetts Medical Society has occupied the President's chair for more than two years. Through a peculiar combination of circum-

stances the present incumbent has broken the record of over half a century. He did not have the "third term bee in his bonnet," but without his knowledge or consent, he was elected for the year now closing. He was practically compelled to accept the position for the third term. You all know how well he has performed its arduous duties. Not within the memory of the oldest member has the Society had a more faithful and efficient presiding officer.

As this is the last time he will preside over this Council, it is most appropriate that some formal action be taken at this time to show our high appreciation of his active and efficient service. I beg leave to submit the following motion:

Moved: That the Council of The Massachusetts Medical Society, in its annual meeting assembled, hereby extend a most cordial vote of thanks to Dr. Samuel B. Woodward, as a slight token of our appreciation of his energetic, enterprising and efficient services during the past three years as president of this Society. May his future career be as pleasant as his past has been successful.

The motion being put was voted unanimously.

The Librarian presented his annual report and it was accepted by vote.

REPORT OF THE LIBRARIAN.

June 3, 1919.

The Librarian presents his 35th annual report and would state that during the past year he has endeavored to perform the duties of his office to the best of his ability.

Respectfully submitted,
EDWIN H. BRIGHAM.

The Secretary read the following report of the Treasurer, who was unable to be present.

REPORT OF THE TREASURER, JUNE 1, 1919.

WORKING FUND.

Balance on hand, January 1, 1919	\$ 2,276.05
Rec'd from funds and assessments	17,569.07
Total	\$19,845.12
Payments, including two payments to the JOURNAL of approximately \$200 each, and dividend of \$2500 to the District Societies	10,254.12
Balance, June 1	\$ 9,591.00

INACTIVE FUND.

Fund in the Old Colony Trust Co.	\$3,227.36
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370 odd members have not paid in full or have been exempted; about 11% of the total membership.

ARTHUR K. STONE, Treasurer.

The President nominated and the Council appointed these standing committees for the ensuing year:

STANDING COMMITTEES FOR 1919-1920.

ARRANGEMENTS.

R. H. Miller, C. H. Lawrence, Jr., Donald Macomber, A. W. Reggio, J. B. Swift, K. G. Percy.

PUBLICATIONS AND SCIENTIFIC PAPERS.

E. W. Taylor, R. B. Osgood, F. T. Lord, R. M. Green, A. C. Getchell.

MEMBERSHIP AND FINANCE.

C. M. Green, Algernon Coolidge, Jr., Samuel Crowell, Gilman Osgood, Homer Gage.

ETHICS AND DISCIPLINE.

J. W. Bartol, Henry Jackson, T. J. Robinson, David Cheever, F. W. Anthony.

MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

Channing Frothingham, C. F. Painter, J. F. Burnham, A. G. Howard, R. L. De Normandie.

STATE AND NATIONAL LEGISLATION.

Alfred Worcester, F. G. Wheatley, E. H. Stevens, J. S. Stone, A. R. Crandall.

PUBLIC HEALTH.

E. H. Bigelow, Annie L. Hamilton, E. F. Cody, Victor Safford, R. I. Lee.

Adjourned at 1.40 p.m.

WALTER L. BURRAGE, *Secretary*.

APPENDIX TO THE PROCEEDINGS OF THE COUNCIL.

REPORT OF THE COMMITTEE ON ETHICS AND DISCIPLINE.

Four meetings have been held during the year and one board of trial was convened by the President, at which the chairman of the committee acted as prosecuting officer, under the terms of the By-Laws, with the result that a conviction was obtained and the finding will be reported to the Society at its meeting tomorrow.

Complaints have been received of unethical advertising, of unethical practising, unethical conduct, illegal commitment as an insane person to an insane hospital, making unwarranted claims of ability to cure and advertising methods of treatment. As a result of investigations carried out by the committee, two Fellows have been asked to resign their fellowship, and their resignations have been accepted by the Council, one Fellow was tried by a board of trial and found guilty of the charges brought against him, several of the charges were found to be baseless; two or three are still pending.

The question of revising the Code of Ethics of the Society that was adopted June 10, 1884, has been considered by this committee on many occasions during the past five years. Whether they should be specific and adapted to the many phases of the physician's relations with his brother practitioners, his patients, and the public, like the Code of Ethics adopted by the American Medical Association in 1913, or in general terms only, like the existing Code of Ethics, was discussed at various times. The general feeling was that in any event the code should have a careful going-over, and, if nothing more, that its language should be modernized, and its provisions adapted to the needs of the practitioner of today.

J. ARTHUR GAGE, *Chairman*.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

On behalf of the Committee on Medical Education and Medical Diplomas, I beg to present the following report:

Exercising its authority to rule upon the diplomas from schools not on the accepted list and presented by candidates for Fellowship in the Massachusetts Medical Society, six cases were acted upon during the past year. The only difficulty that seems to occur in the handling of these cases is the fact that the

secretaries of the District Societies do not in all cases recognize that doubtful diplomas must be submitted to the Committee on Medical Education and Medical Diplomas before the owners are admitted to examination by the Censors. Occasionally somewhat embarrassing situations have arisen by reason of the fact that the requirements of the By-Laws have not been strictly adhered to.

A matter that seems to the Chairman to be of considerable importance is the survey that is being made of the hospitals of the country to determine which of them may be considered capable of furnishing adequate intern service. This investigation was started some years ago under the auspices of the Council on Medical Education of the American Medical Association. Your Committee was later requested to take some action in the matter, but felt itself unable to do so by reason of the fact that every one of its members was engaged in the service of the country in one way or another. The matter has, however, not been allowed to drop by the Council on Medical Education and Medical Diplomas, and the Chairman of the Committee had hoped to be able to conduct the desired investigation during the coming year. This, however, may very properly be delegated to others.

The annual conference of the Council on Medical Education of the American Medical Association, of the Federation of the State Medical Boards of the United States, and the Association of American Medical Colleges was held in Chicago on March 3 and 4, 1919.

There were, of course, a number of striking points brought out. The surplus medical population in this country is well indicated by the statement of Dr. Colwell, that we have one Doctor of Medicine to a little over 700 of the population, whilst in Europe there is but one to every 1500 or 2000.

The need for a study of the hospitals asking for interns is shown by the fact that several years ago there were 7000 institutions of some twenty-five to one thousand beds asking for interns, and that unquestionably a large number of these do not give an adequate return to the young medical men acquiring positions in them.

The further need for the closer study and control of medical education was shown in the paper by Brigadier General Munson, in which he showed that, as a result of the examinations conducted at the end of certain of the training courses offered by the Medical Corps of the Army, those holding the degree of Doctor of Medicine ranked lower than any other class—below the dentists, veterinarians, members of the Sanitary Corps, and so on.

Much regret was expressed that by reason of the armistice, the Reserve Officers' Training Corps, planned upon so extensive a scale and begun under such brilliant auspices, was not given a full year's trial. This, in the minds of many individuals, should have been done, not only by reason of the moral obligation believed to have been incurred, but in order to give the educational knowledge that the experience would have furnished. The desirability of Units of the Reserve Officers' Training Corps in medical schools was argued at length by Lieutenant-Colonel Arnold, Medical Corps, United States Army. The scheme suggested was of an elaborate character, covered ten hours a week for a year, and involved two summer training camps. It was not carried out by reason of the failure of the appropriation, and its somewhat elaborate character. Since that meeting, later indication seems to show that something of the kind may be proposed and successfully adopted in the near future.

"Hospital Standardization and Intern Year" formed the subject of a paper and of discussion for the afternoon session. Dr. A. R. Warner, who opened the discussion, urged a rotating service so that the internships should include medical, surgical, obstetric, and gynecological experience. Theoretically, of course,

such a rotating service is of great importance. Practically, however, it will be a long time before it can be secured in many of the large hospitals.

Dr. A. D. Bevan took part in the discussion of the internship and spoke at length, urging the universal requirement of a hospital fifth year before the granting of the degree of Doctor of Medicine, and emphasized the fact that he thinks the control of this year should be in the hands of the state boards of registration in medicine.

Dr. E. P. Lyons, Dean of the University of Minnesota Medical School, suggested that the reason that intern work is so poor is because the hospital staff does not recognize its obligations. Giving his idea of hospital training, he places three periods of six months each in the last two years of medical study. One, the first period, should be didactic, covering elementary medicine; two, a course in a university hospital, covering work in general medicine and the specialties; the third, a student internship involving residence in one of the hospitals affiliated with the school, which should be a part of the work for a degree. This hospital training should include also some lectures and thesis work, and does not at all affect the hospital fifth year, excepting so far as making the men better fitted for it.

Mr. Francis W. Shephardson, Director of the Department of Registration and Education, Springfield, Ill., spoke from the standpoint of the State Licensing Boards, argued in favor of small community hospitals, saying that they were to be more and more the centers of hygiene in the places where they were located. Speaking of the workmen's compensation act which forces the state to have knowledge of good hospitals and what ones are capable of training nurses, he said that his Board must also grade the hospitals, but that he believed that this grading should be done by some central authority and not by boards of registration in medicine.

Other speakers argued that no intern should be admitted who had not been licensed to practise, and, on the other hand, it was said that no intern in a hospital can be licensed to practise. The diversity of these speakers and the varied points of view just spoken of will indicate the complexity of the problem under discussion.

A title that attracted attention and excited much anticipatory interest was "Freedom in Medical Education," to be presented by Dr. Charles R. Bardeen of the University of Wisconsin, but Dr. Bardeen was ill and not able to be present, so the paper was not given. A personal letter informs me that not only was the paper not presented but it was not written—by reason of his illness. In this letter he speaks as follows:

"I feel that it is a very important subject, and that since we have gone way to the extreme in defining the medical curriculum and pre-medical preparation during the last few years, we must now give an effort to swinging back into a position of greater freedom, while not giving up ideals of efficiency."

This is a position with which many of us may sympathize.

HAROLD C. ERNST, *Chairman*.

REPORT OF THE COMMITTEE ON STATE AND NATIONAL LEGISLATION.

The Committee on State and National Legislation herewith presents a report of the work done during the year:

The number of bills presented to the Legislature this year has been larger than usual. The President has scrutinized every bill filed and, after ascertaining the attitude of your Committee, has appeared at every important hearing where matters pertaining to physicians, medicine, and public health have been considered. He has continued his devotion to the protection of the vaccination laws now in force, and has

maintained an active educational campaign for the extension of compulsory vaccination in private schools. His correspondence relating to these matters has been voluminous, and he has secured the endorsement of practically every influential factor in educational and public health organizations in the State. The result of this work has apparently placed the present vaccination law on a more secure foundation in this State than ever before. The opposition has grown distinctly less forceful and aggressive, and the attitude of legislators is more intelligent, but it must be kept in mind that a new legislator is born with great frequency and the need for education of the future law makers will exist, for the opposition will, if it follows precedent, employ every resource which prejudice and ignorance can use to obscure the real truth. After attending these hearings it is difficult to restrain one's expressions to the moderate language of the preceding sentence.

The Bill 1749 provides that a pupil who has not been vaccinated shall not be admitted to a public or private school except upon presentation of a certificate signed by a registered physician stating that the health of the pupil would be endangered by vaccination. It further provides that the physician must make a personal examination at the time of signing the certificate. A few years ago it would have been impossible to have secured much support for this act, and the considerable majority of the House in favor at this time is a tribute to the diplomatic work conducted for the past two years. The Senate, however, failed to concur in the action of the House.

All bills relating to milk have been left with your industrial accidents to the committee appointed for that purpose.

The labor and pension bills were not considered except where there seemed to be a medical question involved.

BILLS OPPOSED.

SENATE BILL No. 42.

That school physicians shall, at the request of teacher, parent, guardian, etc., prescribe in writing for a child examined by him. *Not yet disposed of.*

SENATE BILL No. 49.

To repeal the requirement for vaccination upon presentation of a written statement submitted by a parent or guardian, or by the pupil himself in case he has reached the age of twenty-one, stating that the person signing the statement is opposed to vaccination. (Petition of Medical Freedom League.) *Leave to withdraw.*

HOUSE BILL No. 68.

One drug store in each town and city, if maintaining a public telephone, shall remain open all night. *Rejected.*

HOUSE BILL No. 82.

Sale of narcotic drugs to a child under 17 shall be punishable by imprisonment for life. (Under this bill a druggist could not deliver a narcotic drug ordered by a physician in a prescription, to a child under 17.) *Rejected.*

HOUSE BILL No. 83.

First aid articles to be kept in drug stores to be loaned to any one applying for the same to be used in cases of accident. All losses to be paid for by the Commonwealth. *Rejected.*

HOUSE BILL No. 84.

Furnishing county with rural nurses to be appointed after examination by any physician in the county. *Next General Court.*

SENATE BILL No. 91.

Providing for maternity benefits and the creation of a Maternity Board, consisting of three women. Bill provides for an appropriation of \$25,000. *Next General Court.*

HOUSE BILL No. 119.

To prevent the practice of medicine, etc., by those who are not citizens of the country. *Leave to withdraw.*

SENATE BILL No. 157.

Providing for the establishment of a hospital for the treatment of venereal diseases by the State Department of Health. (Opposed because it did not meet the approval of the State Health Department.) *Next General Court.*

HOUSE BILL No. 166.

Bill giving Boards of Health responsibility for the care of all diseases dangerous to public. (This bill was not approved by the State Department of Health.) *Leave to withdraw.*

HOUSE BILL No. 210.

To provide for an appropriation of fifty thousand dollars for investigation of Spanish influenza. *Leave to withdraw.*

HOUSE BILL No. 211.

For the establishment of a hospital for voluntary "mental patients." (Opposed because the Commission on Mental Diseases saw no good reason for the measure.) *Leave to withdraw.*

HOUSE BILL No. 217.

To authorize the Commonwealth to employ all sane physically crippled, blind and partially blind persons who are 25% crippled or 65% blind. *In Committee on Ways and Means.*

SENATE BILL No. 269.

Relating to investigation and reporting of venereal diseases. (Opposed because not quite in conformity to State Department of Health.) *Next General Court.*

SENATE BILL No. 270.

To control the sale of coal tar derivatives. (This bill would have placed these drugs in much the same position as opium.) *Leave to withdraw.*

SENATE BILL No. 271.

Sought to have the title of Doctor of Osteopathy equivalent to the degree of Doctor of Medicine. *Leave to withdraw.*

HOUSE BILL No. 279.

To prevent the transportation of passengers in excess of the seating capacity by street railways during epidemics. *Leave to withdraw.*

HOUSE BILLS Nos. 294, 994, 995, 996, 1129.

For the establishment of a system of non-contributing old age pensions. *Leave to withdraw.*

HOUSE BILL No. 235.

For the establishment of old age annuities. *Leave to withdraw.*

HOUSE BILL No. 296.

For an appropriation of not less than one million dollars for aiding sufferers from influenza. *Leave to withdraw.*

HOUSE BILL No. 327.

Recommendation of State Supervisor of Administration to transfer to the State Department of Health the powers and duties of Trustees of Hospitals for Consumptives. *Not yet disposed of.*

HOUSE BILL No. 949.

For the repeal of that part of the Narcotic Drug Law which refers to the sale of certain medical instruments. *Leave to withdraw.*

HOUSE BILL No. 971.

Providing for removing certain restrictions connected with the sale and distribution of narcotic drugs. *Next General Court.*

HOUSE BILL No. 973.

Appropriating a sum not exceeding one hundred thousand dollars for the control, suppression and treatment of influenza and pneumonia. *Leave to withdraw.*

HOUSE BILL No. 1051.

To prevent the publication of information relating to the death of any person dying as a result of taking poison. *Leave to withdraw.*

HOUSE BILL No. 1054.

To regulate the hours of labor of hospital nurses

and attendants. (Prevents nurses working over eight hours or sleeping in room with patient.) *Leave to withdraw.*

HOUSE BILL No. 1069.

Providing for the licensing of foreign physicians upon recommendation of the ambassador or other diplomatic representative of his country at Washington, and written petition of at least one hundred citizens, including three physicians and three judges. *Leave to withdraw.*

HOUSE BILL No. 1253.

For registration and prohibiting the marriage of feeble minded. (Responsibility of ministers and physicians to report. Fine \$100.) *Leave to withdraw.*

HOUSE BILL No. 1254.

For the establishment of a colony for mental deficient. *Leave to withdraw.*

A protest was made against grouping the Commissioners on Mental Diseases with the Bureau of Prisons, Board of Parole, and State Board of Charity.

STATUS OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF BOSTON.

Several hearings were held by the Committee on Education for the purpose of allowing the College of Physicians and Surgeons of Boston to appear and show cause why the charter issued to this institution should not be revoked. These hearings were a continuation of sessions of the Committee of the previous year and resulted from the recommendations of the Attorney-General that the charter of this college be revoked. This action of the Attorney-General was taken because of the filing of twelve or more sworn statements by students of this college alleging fraud and extortion. Fraud in not providing the instruction advertised in the catalog of the college, and extortion in withholding diplomas and requiring additional money payments after all published requirements had been met.

The Committee of the preceding year evidently wished to be lenient and referred action to the next General Court, with the desire to give the college an opportunity to improve its work so that drastic action might not be indicated. So far as seems to be shown there has been no improvement in the quality and quantity of instruction given.

In order to gain first hand information, three members of this Committee visited the college. In relating the results of their inspection, the language used by this delegation was neither commendatory or even parliamentary.

This matter has not been decided up to this time.

A very pertinent question arises as to whether or not a member of this Society may properly be a supporter of an institution which is discredited by a large majority of the states in this Union, by the Council on Medical Education of the American Medical Association, and about which there is reasonable ground to suspect that the management of its affairs suggests more than inefficiency.

BILLS APPROVED.

HOUSE BILL No. 31.

Relative to cleaning receptacles, and in serving beverages and ice cream. *Rejected.*

HOUSE BILL No. 119.

To prevent the practice of medicine in this state by any person not a citizen of the United States. (Approved if amended to provide that if a person had taken steps to become a citizen, he should be exempt from the provisions of the bill.) *Leave to withdraw.*

HOUSE BILL No. 278.

For the appointment of temporary medical examiners in case of absence or disability of the medical examiner. *Rejected.*

HOUSE BILL No. 318.

That part of bill providing for an appropriation of five thousand dollars to be expended by the State Department of Health for expenses incident to the spread of influenza. *Enacted into law.*

SENATE BILL No. 348.

Bill accompanying report of Recess Committee to promote the practice of school hygiene and health and the physical development of school children.

The bill provides for the appointment of school physicians, school dentists, school nurses, and a director of physical education and training, and prescribes the duties and responsibilities of these officials. The bill places the responsibility for the application of these measures primarily with the Board of Education and the State Department of Health, and the local responsibility is placed with the local school committee and local board of health.

This bill was given considerable attention and several hearings held, during which General Edwards, speaking of the findings of military authorities, contended that the youth of the nation are suffering because of inadequate supervision and training. The State Commission of Health, the Massachusetts Civic League, the Anti-Tuberculosis League, many educators, physicians and social workers spoke most earnestly in favor of this bill.

But there were objections from some that the conjoint responsibility of boards of health and school committees would lead to friction, and by others that state supervision of pupils in private schools is an invasion of personal rights, so that little progress has been made to date. This bill is one of the most important constructive measures before the Legislature this year and even if not adopted now, should be the basis for continued study and effort. If the intent of the measure could be effectively applied it would be a step in advance in the development of future citizens and the prevention of disease. It is hoped that the representatives of this Society will keep in touch with this effort and assist in a solution of these problems.

HOUSE BILL No. 394.

To provide further supervision, care and control of the neglected, dangerous, or uncontrolled feeble minded. *Next General Court.*

SENATE BILL No. 395.

To determine the number of children retarded in mental development and to provide for their instruction. *Not yet disposed of.*

HOUSE BILL No. 398.

To provide a penalty for assisting in the escape of patients from institutions. (Recommended by the Commission on Mental Diseases.) *Enacted into law.*

HOUSE BILL No. 503.

Providing for raising the standards of training schools for nurses, and the compulsory registration of nurses who cannot qualify as graduate nurses. *Portion of bill relating to standardization of training schools enacted as House Bill No. 1690.*

SENATE BILL No. 511.

To provide for the regulation and licensing of day nurseries.

Children shall be under age of fourteen years and shall be received for not less than four hours and not in excess of twelve hours in a day. Shall be under supervision of local boards of health. *Probable enactment.*

HOUSE BILL No. 560.

To investigate the results of the prevailing hours of labor. *Leave to withdraw.*

HOUSE BILL No. 799.

Providing for the inclusion of paregoric and similar drugs in the Narcotic Drug Law. (Endorsed by Asst. Dist. Atty. Webster, Dr. Wheatley of the Committee, and the State Department of Health.) *Leave to withdraw.*

HOUSE BILL No. 800.

For the approval of receptacle for expectoration in factories. *Leave to withdraw.*

HOUSE BILL No. 802.

Providing for the care of incurables in the State Infirmary. *Still before committee.*

HOUSE BILL No. 1004.

To regulate the establishment, operation, and man-

agement of day nurseries, and for licensing same. *Not disposed of.*

HOUSE BILL No. 1100.

For authority of Dept. of Health of City of Boston for cleaning, disinfecting and deodorizing street cars. *Leave to withdraw.*

HOUSE BILL No. 1142.

Recommendations Commission of Blind for care and instruction of adult blind in their homes. *Enacted.*

HOUSE BILL No. 1143.

Relative to payment of a sum not exceeding ten dollars per week to a blind person without means of care or support. *With Committee on Ways and Means.*

HOUSE BILL No. 1144.

Providing for an appropriation of ten thousand dollars to provide sight-saving glasses for children. *Engrossed May 22.*

HOUSE BILL No. 1145.

Recommendations State Department of Health. *Not yet disposed of.*

HOUSE BILL No. 1146.

Appropriation of three thousand dollars to be used by the State Department of Health for securing information relative to the prevention of cancer and for the prevention and control of the disease. *No legislation necessary.*

HOUSE BILL No. 1147.

Providing for appointment of a Deputy Commissioner of Health. *Not yet disposed of.*

HOUSE BILL No. 1148.

Authorizing the State Department of Health and Board of Education to make an investigation of the medical inspection of schools. *No legislation necessary.*

HOUSE BILL No. 1176.

For the medical treatment of inmates of public charitable institutions or of persons in penal institutions afflicted with syphilis, gonorrhea, or pulmonary tuberculosis. *Next General Court.*

HOUSE BILL No. 1234.

Providing for the physical examination of persons engaged for hire in the preparation and serving of foods. *Leave to withdraw.*

SUMMARY.

An analysis of this report shows that there were twenty-nine (29) bills opposed, of these five have been referred to the next General Court and three are yet before the Legislature, eighteen given leave to withdraw and three definitely rejected. That is, the Legislature has taken the same attitude as your Committee on twenty-one out of twenty-nine in this group.

Of the twenty-six (26) bills approved by this Committee, five have been enacted into law, two have been referred to the next General Court, eleven have been rejected, and eight are still before the Legislature.

This shows that the effort for constructive legislation has not been as successful as it should be.

The Committee which will be elected today may find opportunity to enter upon active duty so far as a few of these bills are concerned and it is hoped will have better success next year.

SAMUEL B. WOODWARD, *Chairman.*

EDMUND H. STEVENS.

FRANK G. WHEATLEY.

ARTHUR R. CRANDELL.

WALTER P. BOWERS, *Secretary.*

REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

The work of the Committee the past year has been mainly along three lines:

First, in helping to secure speakers for the District Societies on public health matters.

Second, assisting in bringing various public and private health organizations of Massachusetts into cooperation, to the end that the activities in public welfare called into being by the war may be conserved and team-work promoted between these organizations.

Third, making plans for a public health demonstration in Springfield this summer.

The epidemic of influenza which swept our state last fall and winter emphasized the helplessness of the physician to deal single handed with the disease. Only by a widespread knowledge of ways and means of fighting the threatening scourge, and an enthusiastic purpose to back up local and state health administration by the physicians of Massachusetts can serious outbreaks of disease be met and controlled.

In response to an appeal by your Committee to bring to the members of the District Societies first hand information by experts on the various phases of public health work and the control of diseases in the state, the following gentlemen gave their services through the winter and spring, speaking at district meetings: Prof. William T. Sedgwick, Dr. José P. Bill, Dr. John Bapst Blake, Dr. Walter E. Fernald, Dr. Timothy Leary, Dr. C. Morton Smith, Dr. Edwin H. Place, Dr. Victor Safford, Dr. William C. Woodward, Dr. George H. Wright.

We gratefully acknowledge the service rendered by these speakers to our state.

We also wish to record our appreciation of the hearty response made by officers of the District Societies to this plan. It is desirable that a continuation and extension of this work be made the coming year. In April, a meeting of representatives of live organizations identified with some form of public health work was held at the Medical Library. This meeting was called in response to suggestions made to your Committee that closer relationship be brought about between public and private health agencies and that an effort be made to utilize for our people the splendid welfare agencies called into being by the war. The idea of a central association to act as a clearing house and to promote team work among the organizations was fully discussed and approved, in principle, by representatives of fifteen associations present.

A committee of seven was appointed to report a plan of organization. Your Committee is hopeful of the formation of a central organization which shall appeal to and command the confidence of the citizens of the Commonwealth.

Can we in this way help the health work of the state not only to hold its own after the people begin to feel the full weight of the burden of taxation which the war has produced, but to advance the work and keep Massachusetts to the front among state organizations in the fight for healthy homes?

There is keen and widespread interest in public health in the western part of our state. This interest has been fostered by the district health officer in Springfield, Dr. George T. O'Donnell, who makes his appeal for better health conditions before various organizations and in the town meetings of his district.

With the coöperation of Governor Coolidge, the National and State Departments of Health, the Massachusetts Association of Boards of Health, physicians, local health officials, and public school teachers, we plan a health demonstration in Springfield this year which will exceed in interest that held last May in Boston. We ask the help of the members of the Council in promoting this plan.

Your Committee finds an increasing public interest in health administration throughout the state. An educated public insists on trained local health officials to administer the laws and save lives in this Commonwealth.

We honor today the memory of two Massachusetts men, public health workers, who have passed on: Capt. William Wright Walcott and Mr. Edward A. Ingham. Dr. Walcott, who died in France of military tuberculosis following wounds and gas, was district health officer of Massachusetts. Mr. Ingham was agent for this Committee, going to California as district health officer. He died of influenza, fighting the epidemic. These lives of heroic and unselfish service are an inspiration to every pub-

lic health worker. They brighten the outlook and give us fresh courage for the future of public health work in the old Commonwealth.

ENOS H. BIGELOW, *Chairman*,
EDMOND F. CONY,
VICTOR SAFFORD,
ANNIE LEE HAMILTON.

REPORT OF THE COMMITTEE ON THE CONTROL OF CANCER.

The permanent Committee on the Control of Cancer desires to make a report to the Council on its work since its appointment.

During the last two years it has been difficult to interest the community in anything except war work and the Committee judged it unwise to attempt as active a campaign as had been planned. It believes that the time has now come when its work may profitably be taken up with more activity.

It has, during the past two years, maintained correspondence with the secretaries of the District Societies, urging upon them the necessity for the devotion of a portion of their meetings to a consideration of cancer, and has furnished specially qualified speakers for such meetings whenever they were arranged.

It has prepared the following so-called Decalogue on Cancer:

CANCER DECALOGUE.

1. *The classical signs of cancer* are the signs of its incurable stages. Do not wait for the classical signs.

2. *Early cancer causes no pain.* Its symptoms are not distinctive but should arouse suspicion. Confirm or overthrow this suspicion immediately by a thorough examination and, if necessary, by operation. The advice, "Do not trouble that lump unless it troubles you," has cost countless lives.

3. *There is no sharp line between the benign and the malignant.* Many benign new growths become malignant and should, therefore, be removed without delay. All specimens should be examined microscopically to confirm the clinical diagnosis.

4. *Pre-cancerous stage.* Chronic irritation is a source of cancer. The site and the cause of any chronic irritation should be removed. All erosions, ulcerations, and indurations of a chronic character should be excised. They are likely to become cancer.

5. *Early cancer* is usually curable by radical operation. The early operation is the effective one. Do not perform less radical operations on favorable cases than you do on unfavorable ones. The chances for a permanent cure are proportionate to the extent of the first operation. Make wide dissections, incision into cancer tissue in the wound defeats the object of the operation and leads to certain local recurrence.

6. *Late cancer* is incurable though not always unrelievable. Radium, x-rays, ligation, cauterization, or palliative operations may change distress to comfort and may even prolong life.

7. *Cancer of the breast.* All chronic lumps in the breast should be removed without delay. Benign tumors can be removed without mutilation. Examine all specimens microscopically. An immediate microscopic examination is desirable since, if positive, it permits a radical operation at the same sitting. A radical operation performed ten days after an exploration is almost never successful in curing cancer of the breast.

8. *Cancer of the uterus.* Any irregular flowing demands thorough investigation. Offensive, or even very slight serous flows are especially suspicious. Curette and examine microscopically. Amputate all eroded cervix which do not yield promptly to treatment. Do not wait for a positive diagnosis.

9. *Cancer of the digestive system* is difficult of early diagnosis and therefore unfavorable in progno-

sis. All persistent and recurring indigestions (more especially if attended by change of color and loss of weight) and any bleeding or offensive discharges demand prompt and thorough investigation. Do not wait for a positive diagnosis.

10. *Cancer of the skin.* Any warts, moles, or birthmarks which enlarge, change color, or become irritated should be removed promptly. They are likely to become cancer. Do not wait for a positive diagnosis.

This was published many times at intervals of a few weeks in the columns of the BOSTON MEDICAL AND SURGICAL JOURNAL; and, through the collaboration of your Committee with the American Society for the Control of Cancer, has also been utilized in other parts of the country.

Your Committee has kept in correspondence with the above named society and with other cancer organizations in the state and elsewhere. Its members have taken an active part in the preparation of a pamphlet which has been prepared by the American Society for the Control of Cancer and is now being published jointly by that society and the American Medical Association. This is brief but exhaustive, and it is a thoroughly authoritative, statement of the essential facts in the natural history, prognosis, diagnosis, and treatment of malignant disease in its various forms and situations. It is intended for general distribution among the medical profession. The American Society for the Control of Cancer and the American Medical Association hope to secure this general distribution through collaboration with the several state societies. Your Committee believes that there can be no more effective means of combating this disease than by the distribution of such a pamphlet to the profession. The pamphlets can be procured through the American Society for the Control of Cancer at the actual cost price of printing and binding, and it is estimated by Dr. F. R. Green, Secretary of the Council on Health and Public Instruction of the American Medical Association, that the price will prove to be fifty-five dollars per thousand.

Your Committee earnestly urges that the Massachusetts Medical Society should take its share in the campaign of education of the profession, and recommends that the Massachusetts Medical Society should purchase a sufficient supply of these pamphlets and distribute them to its members throughout the state. If the Massachusetts Medical Society will do this, your Committee believes that it can induce the Massachusetts State Committee of the American Society for the Control of Cancer, and the State Commissioner of Health to undertake jointly the purchase and distribution of the same pamphlet to the 2000 Massachusetts practitioners who are not members of the Massachusetts Medical Society.

Cancer is the most destructive of all diseases in adult life, killing one out of eleven of all those who have attained the age of forty, and is believed by statisticians to be steadily upon the increase. A large proportion of this enormous death rate is preventable and can be prevented if the public and the profession can be waked up to the importance of radical treatment of the so-called pre-cancerous conditions and of the earliest and doubtful stages of the actual disease. Statistics which have been obtained by the American Society for the Control of Cancer, by the insurance companies of the country, and by some of the now many cancer control committees of the state medical societies, show that a great part of the deplorable delay and consequent mortality is due to the persistence with which the medical profession clings to the old fashioned ideas about diagnosis and treatment.

Your Committee desires to continue its efforts along the lines already mapped out and contemplates, in addition, collaboration with the State Committee of the American Society for the Control of Cancer and with the State Commissioner of Health in the

pursuit of a campaign of popular education among the laity, which was under way before the war, which is believed to have accomplished a great deal of good and which it is planned to resume in the immediate future. Your Committee hopes that you will approve the work that it has already done, and direct its continuance.

Respectfully submitted,

EDW. REYNOLDS, *Chairman*,
J. COLLINS WARREN,
JOHN T. BOTTOMLEY,
ROBERT B. GREENOUGH,
DR. EDWARD P. RICHARDSON
is absent in service.

Correspondence.

THE PLACE OF MEDICINE IN POLITICS.

Mr. Editor:—

During my three years' presidency of the Massachusetts Medical Society, I thought I saw certain things that the medical profession ought to do and, at the annual dinner, brought these things to the attention of those present.

May I use your columns, which reach a larger audience, lest the press statement that "Dr. Woodward thinks the Massachusetts Medical Society ought to get into politics" be not considered the only conclusion arrived at.

I stated that I was convinced that more medical men should come out of their retirement and take interest in public affairs and that we had too long remained indifferent to the opportunities offered us to help in the shaping of legislation which concerns the public health, the public welfare, and the interests of the profession.

I asked why we, of all the professions and occupations, should be expected never to think of ourselves, to give without receiving, to be legislated for and legislated against with never a thought of our own wishes.

I stated that it had been thrown in my teeth by a legislator of prominence that he would see if the Massachusetts Medical Society should get into politics and I asked why this Society had not just as much right to get into politics in a proper manner as any other organization that sees fit to do so.

I stated that, in my opinion, it was its duty to do this and that it must do it, if it fulfilled its function as a representative body of physicians.

I stated that it ought to cooperate in close union with any other body of reputable physicians not affiliated with it, and thus present a united front in matters that concern the profession of medicine, the great questions of public health; and in those questions of public policy on which we, as educated men, should have decided opinions; that we did not in America grasp our opportunities as they were taken advantage of in other countries, notably in those where the Latin races were in control; that it would be a good thing to see an occasional medical senator or representative of parts in Washington, and that right here at home we needed more medical men in our own Legislature.

There are always a few in the House but rarely one in the Senate, where a medical man could do work of special importance.

In 45 years one physician succeeded in obtaining a place in the Governor's Council and here a physician could have great influence for good.

I stated that we ought to become more prominent in civic affairs and active on other boards than on those in control of our schools.

That, in conclusion, we should take more interest in public health matters, should urge the appointment of full paid health officers throughout the Commonwealth, cooperate with local health boards, the State

Board of Health, and, in fact, come out in the open and not be content to occupy ourselves, as so many of us are, with the welfare of our own little circle of patients and with that only.

I said all this because it has been favorably impressed upon me during my occupancy of the office with which the Society had honored me, as it will, I think, be impressed upon my successor. And I repeat them now because of their importance if we are to hold our place in the changed world now being moulded into new shape. SAMUEL B. WOODWARD.

A CASE OF ENCEPHALITIS LETHARGICA WITH PROGRESSIVE PARALYSIS.

Boston, May 15, 1919.

Mr. Editor:—

Genia (Jennie) Kernetski (Kernicki) of 72 North Margin Street, Boston, born in Boston in December, 1914, of Austrian parents.

Past History. Has never been ill. I was called to treat her on March 25, 1919, when she had been ill for two (2) days with a high fever, headache, chills, slight nose bleed and pain in the extremities.

Mother had given her castor oil and spoused her with alcohol.

Child bright and answers every question (propounded by me in her native tongue—Polish) intelligently.

Patient complained of headache, backache, pain in the extremities, slight diarrhea, did not vomit.

Physical Examination. Child well developed and nourished. Pupils equal, react to light and distance. Fauces reddened. Tongue coated, papillae slightly raised. No stiffness or tenderness of neck. No retraction of head. No cardiac enlargement. No murmurs.

Slight bronchial breathing and mucous râles throughout left lung and right base.

No abdominal tenderness, no masses, no rose spots, no enlargement of liver or spleen. No paralysis of extremities. No Koernig, no Babinski. Temperature 103.4°, pulse 110, respiration 40. Urine negative except for slight traces of albumin.

Diagnosis made of influenza and case reported to the local board of health.

Patient visited daily.

The disease ran an uneventful course for five (5) days, the temperature reaching 104.2° on March 27 (maximum) and 101° on March 28 (minimum).

March 30 the disease began to show its promethic nature. A complete change suddenly took place in the patient as though by some powerful magic hand. The wide-awake, restless, active child, with handsome mobile features, became transformed into a drowsy, apathetic, somnolent, lifeless creature who all at once lost her entire interest in everything surrounding her.

While talkative before, she could not be made to answer queries by threat of force on part of mother, whom she generally feared. She refused to take food voluntarily, but fluids were given her by force, in small quantities. Child subsequently fell into most profound stupor. On April 1st, left eye developed slight nystagmus, later, pupil becoming fixed. Both extremities on right side became paralyzed.

At this juncture the parents of the patient became resigned to child's death, and my visits to the house were not greeted with outstretched arms.

I, however, by some diplomatic means, managed to continue my studies of patient daily.

On April 6, right pupil became fixed.

On April 7, paralysis of both extremities on left side had taken place.

April 9, child died.

CONCLUSION.

Absence of history of trauma excluding hemiplegia, of active cardiac or pulmonary disease precluding possibility of embolus, a five day period during which child was responsive to external stimuli, fever last-

ing five days, temperature after fifth day dropping to below 100°: symptoms characteristic of an infectious disease, exceedingly profound stupor,—all this lured me into my diagnosis of encephalitis lethargica.

Were the symptoms of the first five days those of true influenza or was it a peculiar syndrome of the initial stage of the yet unexplored disease encephalitis lethargica? I cheerfully invite discussion.

HARAY BELIN, M.D.

WARNING.

Boston, June 7, 1919.

Mr. Editor:—

Some months ago a man giving the name of George A. Bartlett, residence at 362 Rivington Road, North Beverly, Mass., called upon me, complaining of great pain in the abdomen and seeking relief. After a careful examination I found a large scar upon the abdomen and a hernia such as is not infrequent after abdominal operations. He refused to accept my opinion and go at once to a hospital for observation and treatment but stated that he would prefer to go to the Beverly Hospital where he had been operated upon.

He was apparently in great pain, with occasional paroxysms of greater intensity. He represented that he lived in Brookline, but he had been robbed of all his money on the car or as he was leaving the car on his way to my house.

I gave him morphine sufficient to control the acute pain and enjoined upon him the urgency of immediate treatment and gave him money for his fare to Brookline, and he disappeared on his way home.

My reason for issuing this warning is that a man later called upon several other physicians in this vicinity, with the same history, one of whom offered the use of his automobile to transport him to a hospital, which was refused by the patient. I suspect that the man's name is fictitious and his residence, as given me, is also problematical.

This person obtained three doses of morphia from as many physicians, refused the offer of hospital care, and located the place of his former treatment always in towns on the north side of Boston.

It would seem that he is faking the physicians in turn and about the city, in order to obtain hypodermic injections of morphia, which his symptoms would seem to demand from any sympathetic practitioner.

This may be a novel way of appeal to the profession, but it has been successful in a number of instances and seems to be a mode of imposition which would warrant this effort to save other doctors from fraudulent cases.

Yours very truly,

ALBERT N. BLODGETT.

A MORPHINE THIEF.

Mr. Editor:—

On May 30, 1919, morphine tablets were stolen from my office. The day following, one of my colleagues a few doors away was relieved of his morphine. I think other doctors have had a like experience. Perhaps a word in the JOURNAL would reach those who do not at the present time realize that active thieving is going on. Beware of the "sick" stranger who "must wait for the doctor to return." Keep your office door locked and your morphine securely hidden—mine was in my desk drawer, but the drawer was not locked. Some of the doctors around here have returned and found the "sick" man before he had time to steal—he is the fellow who asks you for a hypodermic of morphine. I understand one of these crooks is operating as a sample man. If the doctor returns before he has had time to get out, a few samples are offered. In the meantime the sample man has filled his grip with anything from morphia to instruments.

DR. C. D. KNOWTON

ARSPHENAMINE AND VASO-DILATORS.

Boston.

Mr. Editor:—

I was glad to read a very interesting article on this subject by Dr. George E. Barnes in the May 15th issue of the JOURNAL. The subject has been ably discussed by the writer. What he says therein is a new application of Bartholomew's original suggestion concerning the use of nitroglycerin (trinitrin) combined with iron in the treatment of anemia. The master American therapist thus epitomizes his doctrine of the treatment of anemia:

"Under its (nitroglycerin's) action, the heart contracts more frequently and energetically, the arterioles dilate, and thus the organs of circulation are helped in two modes: in facilitating the distribution of the blood by lessening the pressure in the arterioles at the periphery; and in improving the power of its own muscular tissue by the increased amount of blood passing into it through the coronary artery. If we add to these good effects the permanent improvement of nutrition by a suitable diet and exercise, we have a satisfactory solution of some of the most difficult problems given us to solve. It should be understood, also, that the improvement of nutrition by increased alimentation is the more complete because, by the action of trinitrin, a much larger amount of blood is obtained by the tissues and hence more of the nutritious matters than would be otherwise available. The heart may be feeble and act imperfectly, the peripheral arteries may contract on their lumen, and thus hinder the passage of the blood. To bring about a proper activity of the nutrition it is necessary to restore the organs of circulation and admit the fullest nutrient supply to all the tissues. It is this function of trinitrin that places it in the front rank of remedies for anemia."

Does this dictum also apply to the action of the virus of syphilis upon the circulatory vessels? If it does, then trinitrin has some value in the treatment of syphilis as Bartholomew held it had in that of anemia. Of course, it goes without saying that the action of trinitrin is purely mechanical. By its own essence it has no nutritive or chemical value upon the blood. It simply opens up the floodgates, so to speak, to let the life-giving fluid march on in its mission of regeneration. The only danger in its administration would be the lowering of the blood pressure, as Dr. Barnes well remarks, with the consequent symptoms of vertigo, faintness, tension of the head, etc. Dr. Barnes admits that its action is rather fugacious. Why not, then, use some other vaso-dilator which has a steadier action upon the nerves, for instance, sodium nitrite, which is mildly saline in taste and soluble in five parts of water? Suppose with each dose of arspenamine we mix one grain of sodium nitrite. The dose of one per cent. alcoholic solution of nitroglycerine is from 1 to 5 minims. At its best, an alcoholic solution is not an ideal preparation to be frequently administered intravenously. But the greatest drawback to the use of nitroglycerine, especially in intravenous administration, is the fact that the susceptibility to it in different subjects varies so greatly. It is very efficacious for instantaneous use in emergency cases, but it is not dependable for continuous service in the treatment of such a protracted disease as syphilis.

But, Mr. Editor, I have another purpose in view in writing these lines, which has been agitating my mind for a considerable length of time and concerning which I have spoken to some of my brother practitioners and I have also written to our Health Commissioner, Dr. Eugene R. Kelley.

Arsphenamine is now being administered in solution, mostly intravenously and occasionally subcutaneously. Is this the best or the only way of exhibiting this drug? Is there any authenticated evidence of its being dangerous to health and life if it is administered by the mouth? Is there any other drug in the whole category of medicines in Materia

Medica which can be administered only intravenously and becomes dangerous if given by the mouth? In my conversation with Dr. W. H. Watters on the subject, he told me that arspenamine would be decomposed by the gastric juice if given by the mouth. If so, why not "sugar coat" it with another harmless and antiseptic drug, for instance, with salol, which is "insoluble in the gastric juice but dissolves freely in the intestinal juices after the pancreatic has joined" (Bartholomew).

If I may be permitted to quote from a private letter, Dr. Kelley in answer to my inquiry on the subject says that "all of those best qualified as experts in arspenamine administration not only agree that intramuscular or, preferably, intravenous methods of administration are the only possible ones now, but also because of the peculiar chemical nature of the substance, that they have no expectation that it can ever be successfully administered by any other methods." If this is the verdict of experienced scientists on the subject, as far as I am aware, arspenamine is the only drug which cannot be administered by the mouth. But still the question remains obscure. Why cannot we administer it by the mouth? Who will kindly come forward and give a rational explanation on the subject? Osler advises to give one grain of hydrargyrum cum creta in combination with one grain of Dover's powder, and says one pill from four to six times a day will suffice. Is there any objection to substituting one grain of arspenamine for the mercury in Osler's combination and then administer it by the mouth?

The limitation of the administration of arspenamine to the intravenous method is apt to make the treatment of syphilis an institutional affair under circumstances where there are facilities which cannot be obtained in a private office. But a good many patients would hesitate to go to a public institution for the cure of their disease in this case, while they would readily open their hearts to their private physicians.

Again, in the hands of specialists and under the auspices of highly organized institutions, the intravenous method may be safe, but I have recently seen a patient treated in a suburban town, presumably cured, whose right arm was in a horrible condition, the median cephalic and median basilic veins were indurated and edematous from frequent venepuncture, and all over the anterior aspect of the elbow was an inflamed condition. Is it necessary to discourage the patient in the treatment of such a disease as syphilis where the unfortunate victim needs all the moral courage we can possibly give him? Why not give the drug by the mouth?

DR. H. S. JELALIAN.

MARRIAGE.

DR. WINFRED OVERHOLSER, First Lieutenant, U.S.A., married Miss Dorothy Stebbins on June 4.

RECENT DEATHS.

JOHN RUGGLES GREENLEAF, M.D., a retired Fellow of the Massachusetts Medical Society, died at his home in Gardner, June 8, 1919, aged 78 years.

DR. OSCAR FITZALLAN SWASEY died recently at his home in Beverly, at the age of ninety-two years. He was born in Danville, Vermont, was a graduate of Bowdoin Medical School, and, after practising for a year in Essex, Massachusetts, he went to Seabrook, New Hampshire, and later to Beverly. Dr. Swasey was an active member of the Beverly Hospital Staff, and was a member of the Essex South District Medical Society and the American Association for the Advancement of Science.

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1919

Alphabetical and Local Lists

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Massachusetts Medical Society
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SUPPLEMENTARY

INFORMATION RECEIVED SINCE FINAL REVISION.

Abbott, Howard Edwin, North Reading, Marblehead St.
 Atwood, Blanche Louise, Boston, 483 Beacon St.
 Baker, Leonard Allen, Middleborough, 55 Center St.
 Bassett, Elton James, Taunton, died, March 16, 1919.
 Blake, Clarence John, died, Jan. 29, 1919.
 Bucholz, Carl Hermann, Egypt (Seituate), Office, Boston, 139 Beacon St.
 Bullard, John T., New Bedford, resigned, Feb. 5, 1919.
 Burlingham, Louis Herbert, St. Louis, Mo., resigned, Feb. 5, 1919.
 Burt, Frank Leslie, Peabody, resigned, Feb. 5, 1919.
 Caro, Heiman, Palmer, died, Jan. 22, 1919.
 Bush, Arthur Dermont, Columbus, Mo., University of Missouri.
 Chamberlain, Myron Levi, Boston, died, Feb. 13, 1919.
 Chase, Walter Greenough, Boston, died, Jan. 27, 1919.
 Coffey, Edward Joseph, Jamaica Plain, 777 Centre St., restored, Feb. 5, 1919.
 Crittendon, George Alanson, Springfield, 27 Maple St., restored, Feb. 5, 1919.
 Daland, Ernest Merrill, Roxbury, Huntington Hospital.
 Dwight, Henry Leonard, Copperopolis, Calif., died, Sept. 6, 1916.
 Edsall, David Linn, Cambridge, office, Boston, Mass. Gen. Hosp.
 Fobes, Howard Edward, Brockton, 63 Main St.
 Gallison, James Murry, Brookline, office, Boston, 522 Commonwealth Ave.
 Garbelnick, David Abraham, Manchester, N. H., 1037 Elm St.
 Garrick, Nathan Henry, Boston, 235 Commonwealth Ave.
 Greeley, Hugh Payne, Madison, Wis., 112 North Hamilton St.
 Hamblen, Howard, South Windham, Maine, R. F. D.
 Hampson, Nishan M., Dorchester, 128 Glenway St.
 Harrington, Thomas Francis, Boston, died, Jan. 20, 1919.
 Hogner, Richard Per Gustaf, Boston, retired, Feb. 5, 1919.
 Holzer, William Francis, Worcester, 28 Pleasant St.
 Hopkinson, George, Akron, Ohio, 308 Ohio Building.
 Howes, William Borden, Framingham, School Department.
 Jack, Edwin Everett, Brookline, office, Boston, 215 Beacon St.
 Jackson, Alexander Washington, Providence, R. I., R. I. Hospital.
 Jackson, Roy Chase, Whitefield, Maine, Box 76.
 Kelley, Joseph Henry, Beverly, 222 Cabot St.
 Kirtledge, Thomas, Salem, retired, Feb. 5, 1919.
 Lancaster, Walter Brackett, Cambridge, office, Boston, 522 Commonwealth Ave.
 Lawlor, Richard Henry, Methuen, died, Feb. 12, 1919.
 Linfield, Edwin Porter, Brockton, 43 Hillcrest Ave.
 Langlois, Joseph Augustus, Pittsfield, retired, Feb. 5, 1919.
 Little, John Mason, Jr., Brookline, office, Boston, 374 Marlborough St.
 McCormick John Allan, Boston, died, Feb. 16, 1919.
 MacKeen, Alfred Atwater, Whitman, died, Jan. 18, 1919.
 McCann, Gertrude Fisher, Washington, D. C., Surg. Gen'l's Office, U. S. A. Laboratory.
 McLaughlin, Allan Joseph, Washington, D. C., Asst. Surg. Gen'l., P. H. S.
 McNally, William Joseph, Roslindale (Boston), 46 Hewlett St.
 New, Way Sung, Peking, China, Union Med. College.
 Osgood, George Edward, Wells, Maine.
 Parker, Wallace Asahel, Gorham, N. H., Exchange St.
 Parsons, Azariah Worthington, San Antonio, Texas.
 Pettingill, Olin Sewall, Greenwood (Wakefield).
 Phelan, Edward Francis, North Brookfield, died, Dec. 9, 1918.
 Pillsbury, Arthur Russell, Allston (Boston), 16 Idlewild St.
 Pitcher, Herbert Frank, Haverhill, retired, Feb. 5, 1919.
 Plimpton, Lewis Henry, Norwood, died, Feb. 21, 1919.
 Pomeroy, Harris Starr, Peabody, 93 Main St., restored, Feb. 5, 1919.
 Pratt, Mason Ross, Washington, D. C., Emergency Hospital.
 St. Marie, Philippe, Sorel, P. Q., 74 George St.
 Sawin, Robert Valentine, Brimfield, died, Jan. 19, 1919.
 Simonds, Frederick Artemas, Cambridge, restored, Feb. 5, 1919.
 Sparhawk, Clement Willis, Middleton, Liberty St.
 Spooner, Lesley Hinckley, Boston, 520 Commonwealth Ave.
 Stevens, Sara Elmina, Koloa, Hawaii, Box 72.
 Swift, John Baker, Jr., Brookline, office, Boston, 443 Beacon St.
 Taylor, Frederic Weston, Cambridge, died, Jan. 21, 1919.
 Tolman, Henry, Jr., Boston, 543 Buxton St., restored, Feb. 5, 1919.
 Townsend, David, Brookline, 9 Irving St.
 Tryon, Geneva, Pontiac, Mich. State Hospital.
 Vaughan, Jonas Herbert, Henniker, N. H.
 Vician, William James, Worcester, State Hospital.
 Wells, Frank, Boston, died, March 4, 1919.
 White, Everett, Lynn, died, Feb. 27, 1919.

Massachusetts Medical Society

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ACTIVE AND RETIRED FELLOWS

JANUARY 1, 1919.

Note.—The date preceding the name is that of admission. A date following, preceded by a †, denotes year of retirement. The first name of city or town is the legal residence; the street and number are the office address.

A letter in place of a given first name not followed by a period is not an initial. It is a letter adopted by the individual instead of a name to distinguish him or her from others, or for the sake of euphony.

The last known address is given in this list. Many of the Fellows are, at present, in the U. S. Army and Navy, but have made no official report to the Librarian.

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520 Commonwealth Av.
1916 Aronson, Charles.....Salem. 31 Charter St.
1905 Ascher, Joseph.....Roxbury (Boston). Office, Boston. 344 Hanover St.
1895 Ash, John Henry.....West Quincy (Quincy).
239 Copeland St.
1908 Atchison, Charles Moran...New Bedford. 94 Fourth St.
1894 Atkinson, Lizzie Daniel West Newton (Newton).
Rose 1720 Washington St.
1905 Atwater, James Billings...Westfield. 108 Elm St.
1904 Atwood, Abel Wilson....Worcester. 744 Main St.
1915 Atwood, Blanche Louise...Roxbury. Office, Boston.
175 Dartmouth St.
1883 Atwood, Charles Augustus...Taunton.
15 West Britannia St.
1909 Atwood, Charles Fenner....Arlington. 821 Mass. Av.
1881 Atwood, Frank Sumner....Salem. 125 Federal St.
1892 Atwood, George Manley...Bradford (Haverhill).
127 Main St.
1894 Auger, Louis Lemaitre....Worcester. 104 Franklin St.
1891 August, Albert.....Cambridge. 51 Brattle St.
1887 } Austin, Arthur Everett...Boston. 110 Marlboro' St.
1912 }
1915 Austen, James Cornelius Spencer. 176 Main St.
1917 Avedisyan, Avedis Der...Roxbury (Boston).
26 Savin St.
1903 Averell, Charles Wilson...North Reading.
1896 Averill, George Goodwin...Waterville, Me.
47 Hedington, St.
1882 Averill, Jesse Howes †1918 Campello (Brookton).
1143 Main St.
1910 Ayer, James Bourne.....Boston. 518 Beacon St.
1884 Ayer, Silas Hibbard.....Boston. 318 Shawmut Av.
1896 Ayer, Thomas Herbert....Westborough.
50 West Main St.
1914 Ayers, Charles Eaton....Worcester. 311 Main St.
1914 Ayres, Harold Winslow...West Somerville (Somerville). 403 Highland Av.
1917 Azadian, David George....Boston. 594 Tremont St.

B

- 1878 Bacon, Jonas Edward.....Brookton. 101 Main St.
 1900 Bacon, Newton Samuel.....Cambridge. 1688 Mass. Av.
 1899 Bacon, Theodore Spaulding.....Springfield. 67 Maple St.
 1899 Badger, George Sherwin.....Boston. 48 Hereford St.
 1903 Baff, Max.....Worcester 141 East Central St.
 1913 Bagg, Edward Parsons, Jr., Holyoke. 243 Linden St.
 1915 Bagnall, Elmer Stanley.....Groveland. 9 School St.
 1904 Bail, John Warren.....Brookline. 1677 Beacon St.
 1881 Bailey, Charles Hardy.....Gardner 39 East Broadway.
 1905 Bailey, Frederick James...Dorchester (Boston). 40 Hancock St.
 1893 Bailey, George Guy.....Ipswich. 49 Central St.
 1894 Bailey, Marshall Henry.....Cambridge. 1569 Mass. Av.
 1898 Bailey, Walter Channing...Washington. D. C. 1767 Q St.
 1906 Bain, John Baxter.....Lawrence. 348 Haverhill St.
 1910 Baker, Chester Stoyke.....Lowell. 40 Middlesex St.
 1883 Baker, David Erastus.....Newtonville (Newton). 227 Walnut St.
 1914 Baker, Donald Vinton.....Boston. 1924 Beacon St.
 1892 Baker, Frederick Herbert...Worcester. 4 Linden St.
 1917 Baker, Harold Nicholas...Pigeon Cove. (Rockport). 3 Phillips Av.
 1914 Baker, Harold Woods.....Boston. 49 Gloucester St.
 1882 Baker, Harry Beecher.....Dighton. Office, Taunton. 59 Main St.
 1910 Baker, Leonard Allen.....State Farm (Bridgewater).
 1899 Baker, Lewis Forrester...Fitchburg. 454 Main St.
 1903 Baketel, Roy Vincent.....Methuen. 7 Hampshire St.
 1906 Balboni, Gerardo Monari...Boston. 9 Prince St.
 1891 Balch, Franklin Greene.....Boston. 279 Clarendon St.
 1892 Balcom, George Franklin Swazey. N. H. 39 Main St.
 1911 Balcom, Kenneth Ira.....Worcester 112 Lincoln St.
 1914 Baldwin, Edith Elizabeth...Springfield. 50 Buckingham St.
 1888 Baldwin, Frederick William Danvers. 25 Conant St.
 1895 Baldwin, Herman Trost...Chestnut Hill (Newton). 96 Middlesex Rd.
 1896 Baldwin, Sanford Oscar...Framingham. 11 Union Av.
 1912 Ball, Arthur Nelson.....Northampton. State Hospital.
 1907 Ballou, Ambrose Roche...Neposet (Boston). 290 Neposet Av.
 1901 Balmer, William Edward...Whitinsville (Northbridge). Cottage St.
 1886 Bancroft, Edward Erastus, Wellesley. 604 Washington St.
 1891 Bancroft, George Andrew...Natick. 33 West Central St.
 1877 Bancroft, Winfred Baxter...South Boston (Boston). 597 Broadway.
 1898 Bangs, Charles Howard...Swampscott. Office, Boston. 149 Tremont St.
 1916 Bannerman, Walter Bruce East Bridgewater (Bridge-water). 37 Bedford St.
 1906 Bannan, John Hugh.....Lawrence. 477 Essex St.
 1905 Bardwell, Frederick Albert, Boston. 483. Beacon St.
 1908 Barker, Williston Wright...Dorchester (Boston). 25 Lyndhurst St.
 1892 Barnes, Francis John.....Cambridge. 67 Brattle St.
 1917 Barnes, Frederick Risby...Fall River. 151 Rock St.
 1899 Barnes, Harry Aldrich.....Brookline. Office, Boston. 205 Beacon St.
 1872 Barnes, Henry Jabez Northborough. Office, Boston. 429 Beacon St.
 1900 Barnes, James Arthur.....Worcester. 390 Main St.
 1917 Barnes, Louis Dwight.....Lanesborough.
 1906 Barnes, William Lester.....Lexington. 365 Mass. Av.
 1905 Barney, James Dellinger...Boston. 99 Commonwealth Av.
 1914 Barney, Willis Oliver.....Boston. 483 Beacon St.
 1910 Barnum, Francis Goodell...Boston. 481 Beacon St.
 1913 Barone, Joseph.....Boston. 282 Hanover St.
 1895 Barré, Joseph Aladin.....Fall River. 1555 Pleasant St.
 1900 Barrell, Charles Sewall...Boston. 425 Beacon St.
 1899 Barrell, Mary Elizabeth...Worcester. 904 Main St.
 1907 Barrett, Edward William...Medford. 104 Salem St.
 1904 Barrett, Michael Francis...Brookton. 231 Main St.
 1906 Barron, Elmer Walter.....Malden. Office, Boston. 520 Commonwealth Av.
 1916 Barron, Maurice Edward...Boston. 366 Commonwealth Av.
 1901 Barry, Emmett William...Whitinsville (Northbridge).
 1908 Barry, James Henry.....Roxbury (Boston). 2990 Washington St.
 1906 Barstow, Andrew Thaddeus, Boston. 27½ Mass. Av.
 1899 Bartlett, Charles Watson...Marshfield. Main St.
 1909 Bartlett, Fred Al.....Atlantic (Quincy). 101 Billings Rd.
 1895 Bartlett, Oliver Leslie...Pittsfield. 73 North St.
 1902 Bartlett, Philip Challis...Newton Highlands (New-ton). Office, Boston. 583 Beacon St.
 1905 Bartlett, Walter Oscar...Roxbury (Boston). Office, Boston. 390 Commonwealth Av.
 1903 Bartley, John Joseph.....Lawrence. 334 Haverhill St.
 1906 Bartol, Edward Francis Milton. 6 Reedsdale Rd. Washburn
 1890 Bartol, John Washburn...Boston. 3 Chestnut St.
 1871 Barton, Chester Manley Hatfield. 1906
 1900 Barton, John Alfred.....Fitchburg. 43 Summer St.
 1917 Bass, Harris.....Everett. 342 Broadway.
 1869 Bassett, Elton James 1910 Taunton. 11 Cedar St.
 1917 Bassow, George Joseph...Athol. 503 Main St.
 1914 Batchelder, Hollis Goodell, Dedham. Office, Boston. 520 Beacon St.
 1897 Batchelder, William Dorchester (Boston). Burdett 163 Washington St.
 1895 Bateman, Frank Elliot...Somerville. 163 Highland Av.
 1915 Batcs, Charles Atwood...Ashburnham.
 1889 Bates, Everett Alanson...Springfield. 57 Chestnut St.
 1907 Bates, Lewis Beals.....Ancon, Canal Zone, Panama, Ancon Hospital.
 1897 Bates, Walter Simpson...Barre. South St.
 1916 Battershall, Jesse Attleborough Wolfenden 18 North Main St.
 1879 Battershall, Joseph Ward, Attleborough. 1918 18 North Main St.
 1911 Battershall, Mary Hannah Attleborough. Wolfenden 18 North Main St.
 1912 Bauer, Louis Hopewell...U. S. Army.
 1912 Baum, Ewald George.....Natick. Office, Boston. 2 Park Sq
 1913 Bauman, Julia Holyoke. 97 High St.
 1884 Baxter, Edward Hooker...Lewandowska Hyde Park (Boston). 19 Webster St.
 1913 Beale, Samuel Marsden, Jr., Sandwich.
 1897 Beals, Arthur Loring...Brookton. 106 Main St.
 1912 Bean, Charles Franklin West Medford (Medford). Kingsbury 51 Harvard Av.
 1896 Bean, Charles Pierce...Boston. 426 Mass. Av.
 1917 Bearse, Carl.....Boston. 24 McLean St.
 1906 Beauchamp, Joseph Octave, Chicopee Falls (Chicopee). Office, Springfield. 310 State St.
 1917 Beaudet, Elphège Aléme...Lowell. 268 West 6th St.
 1908 Beaulieu, Elmer Joseph...Whitman. Washington St.
 1906 Beaulieu, Francis Xavier...Taunton. 357 Bay St.
 1899 Beckley, Chester Charles...Lancaster.
 1890 Bedard, Joseph Armand...Lynn. 26 Ocean St.
 1901 Beebe, M. Josephine...Rosindale (Boston). 10 Conway St.
 1901 Beede, Theodore Chapin...Boston. 61 Mt. Vernon St.
 1907 Beely, Leon Gage...Lawrence. 145 Haverhill St.
 1914 Behrman, Roland Augustus, Rosindale (Boston). 147 Belgrade Av.
 1914 Bell, Clarence John...Wellfleet.
 1914 Bell, Conrad...Waltham. 820 Main St.
 1914 Bell, Richard Dana...Somerville. 26 Row St.

- 1906 Bellehumeur, David Lowell. 813 Merrimack St.
Stanislaus
1875 Benner, Burnham Roswell. Lowell. 62 Sixth St.
1898 Benner, Herbert Orray. Framingham. 36 Union Av.
1903 Benner, Richard Stanwood. Springfield. 25 Maple St.
1906 Bennett, Hamlin Perley. Lynn. 41 Lewis St.
1902 Bennett, William Hyde Park (Boston).
Hurlburt 1349 River St.
1898 Benson, Charles Sweetser. Haverhill. 50 Merrimack St.
1898 Berg, Tekla Amalia Lynn. 1 Atlantic St.
Josefina
1903 Bergin, Stephen Albert. Worcester. 33 Portland St.
1916 Berlin, Maurice George. Dorchester (Boston).
3 Esmond St.
1916 Berman, Myer Isadore. Dorchester (Boston).
1063 Blue Hill Av.
1889 Bernard, Barnard South Boston (Boston).
Lecherzack 195 Dorchester St.
1916 Berr, Alfred William. Lawrence.
Lawrence Gen. Hosp.
1914 Berry, Charles Francis. Boston. 541 Commonwealth Av.
1908 Berry, Gordon. Worcester. } 19 Elm St.
1896 Berry, John Cutting. } 1912 Worcester.
1890 Berry, Lauriston M. 1908 Junction, Wyoming.
1917 Berry, Walter Durant. Bangor, Me. State Hospital
1909 Berry, William Christopher. Jamaica Plain (Boston).
Office, Boston.
419 Boylston St.
1901 } Bertrand, Alexis Everiste. } Lowell.
1914 }
1908 Besse, Frank Adelbert. Orleans. Main St.
1907 Bessey, Earle Emerson. Waban (Brookline).
Office, Boston.
845 Beacon St.
1883 Best, Enoch George. Greenfield. 473 Main St.
1901 Bicknell, Ralph Emerson. Swampscott. 148 Burrill St.
1909 Bieherbach, Walter Daniels. Worcester. 31 Pleasant St.
1907 Bier, Max Daniel. Lawrence. 50 Concord St.
1906 Bigelow, Alice Houghton. Jamaica Plain (Boston).
14 Warren Sq.
1882 Bigelow, Charles Edwin. Leominster. 2 Park St.
1905 Bigelow, Edward Bridge. Worcester. 61 Pearl St.
1883 Bigelow, Enos Hoyt. Framingham Center.
(Framingham).
P. O. Box 213.
1913 Bigelow, James Bernard. Holyoke. 61 Pearl St.
1874 Bigelow, William Sturgis. Boston. 56 Beacon St.
1904 Binford, Ferdinand Hyannis (Barnstable).
Augustus Main St.
1903 Binney, Horace. Boston. 205 Beacon St.
1894 Birge, Ella Freeman. Provincetown.
1883 Birge, William Spaffard. Provincetown. Pearl St.
1885 Birmingham, Robert Lawrence. 170 Salem St.
Michael
1909 Birnie, John Mathews. Springfield. 6 Chestnut St.
1897 } Birn, Joseph Frederick { Amesbury. 182 Main St.
1917 } Rodolphe
1914 Bisbee, Ernest Sydney. Boston. 777 Tremont St.
1878 Bixby, Josiah Peet. Woburn. 55 Elm St.
1910 Bixby, Oliver Edward. Lynn. 189 Lewis St.
1901 Blaine, Walter Edward. Mattapoisett. 72 Main St.
1900 Blair, George Kenniston. Salem. 311 Essex St.
1897 Blair, Orland Rossini. Springfield. 580 State St.
1904 Blair, Orrin Curtis. Lynn. 79 N. Common St.
1882 Blaisdell, George Warren. Manchester. 21 Union St.
1913 Blaisdell, John Harper. Lynn. Office, Boston.
45 Bay State Road.
1904 Blake, Allen Hanson. West Somerville (Somerville). 117 Elm St.
1868 Blake, Clarence John. Boston. 226 Marlboro' St.
1906 Blake, Gerald. Boston. 212 Beacon St.
1888 Blake, Harrison Gray. Woburn. 512 Main St.
1890 Blake, John Baptist. Boston. 657 Boylston St.
1901 Blake, Le Grande. Riverside, R. I.
317 Bullock Point Av.
1898 Blakely, David Newton. Brookline. Office, Boston.
87 Milk St.
1882 Blanchard, Benjamin Brookline.
Seaver 432 Washington St.
1913 Blanchard, Paul Drake. Lowell. 226 Merrimack St.
1902 Blanchard, Randall Pittsfield. 7 North St.
Howard
1912 Blanchette, William Henry. Fall River. 142 Brightman St.
1904 Blenkhorn, James. Stoneham. 301 Main St.
1910 Bliss, George Danforth. Dorchester (Boston).
508 Washington St.
1905 Bliss, George Stephen. Fort Wayne, Ind. Ind. Sch.
Feeble-Minded Youth.
1897 Bliss, Jesse Leont. Holyoke. 231 Ilh St.
1911
1871 Blodgett, Albert Novatus Boston. 51 Mass. Av.
1913
1898 Blodgett, John Hammond. Boston. 390 Commonwealth Av.
1912 Blodgett, Stephen Haskell. South Lincoln (Lincoln).
Office, Boston.
520 Beacon St.
1908 Blood, George Willard. Fall River. 723 Middle St.
1868 Boardman, William Boston. 388 Marlboro' St.
Elbridge 1909
1906 Boardman, William Parsons. Boston. 388 Marlboro' St.
1885 Boardman, William Sidney. Boston. 63 Mt. Vernon St.
1916 Bober, Bessie Angela. Northampton. State Hospital.
1912 Bodwell, William Mortimer. Framingham. 2 Lexington St.
1915 Boehm, Julius Benjamin. Brooklyn, N. Y. Greenpoint Hospital.
1910 Bogan, Frederick Leon. Dorchester (Boston).
Office, Boston.
514 Commonwealth Av.
1878 Boland, Elisha Shepard. South Boston (Boston).
809 Broadway.
1912 Boland, Lawrence Francis. Welch, W. Va. Miners' Hospital, No. 1.
1916 Bolduc, Alfred George. Attleborough. 11 Union St.
1891 Bolton, Charles James. Somerville. 26 Chauncy St.
1891 Bond, Sarah Adams. Jamaica Plain (Boston).
Office, Boston.
41 Fairfield St.
1904 Bond, Walter Legrand. West Somerville (Somerville). 322 Highland Av.
1889 Bond, Willis George. Revere. 76 Beach St.
1915 Bone, Herman David. Gardner. 3 Cross St.
1903 Bonnar, James Miller. New Bedford. 186 Pleasant St.
1914 Bonelli, Raymond Peter. Boston. 276 Hanover St.
1911 Bonnevill, Alfred Joseph. Hatfield. 43 Main St.
1901 Bonney, Charles Austin, Jr. New Bedford. 67 Bedford St.
1903 Bonney, Robert. East Boston (Boston).
7 Princeton St.
1897 Boom, Augustus Keefer. Adams. 51 Park St.
1877 Booth, Edward Chauncey Somerville. 40 Boston St.
1915
1907 Boothby, Walter Meredith. Rochester, Minn. Mayo Clinic.
1902 Borden, Charles Richardson Brookline. Office, Boston.
Cobb 520 Commonwealth Av.
1906 Borden, George Edward. Adamsville, R. I.
1893 Bossidy, John Collins. Boston. 419 Boylston St.
1911 Bostick, Warren John. West Springfield. 376 Main St.
1897 Bottomley, John Taylor. Boston. 105 Beacon St.
1897 Boucher, George Alphonse. Brockton. 20 Clinton Av.
1905 Boutwell, Horace Keith. Brookline. 39 St. Paul St.
1913 Bouvier, Charles William. Holyoke. 251 Maple St.
1912 Bowditch, Harold. Boston. 520 Commonwealth Av.
1903 Bowditch, Henry Ingersoll. Boston. 86 Bay State Road.
1881 Bowditch, Vincent Yardley. Boston. 506 Beacon St.
1915 Bowen, Alfred Preston. Lynn. 17 Fayette St.
1913 Bowen, Enos Emanuel. East Boston. 290 Sumner St.
1912 Bowen, James Francis. Amherst. 6 Maple Av.
1887 Bowen, John Templeton. Boston. 14 Marlboro' St.
1912 Bowers, George Francis Worcester. 574 Main St.
Haskell

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| 1879 Bowers, Walter Prentice...Clinton. 264 Chestnut St. | 1908 Broderick, Frank Patrick...Jamaica Plain (Boston). |
| 1891 Bowker, Everett M.....Brookline. 322 Harvard St. | 67 South St. |
| 1894 Bowles, George Hall.....Plymouth, N. H. | 1911 Broderick, Thomas Brighton. Office, Boston. |
| 2 Russell St. | Frederick 501 Beacon St. |
| 1892 Bowman, Fred Raymond...Boston. 8 Cumberland St. | 1884 Broidrick, James Patrick Jamaica Plain (Boston). |
| 1914 Boyd, Francis Peter.....Springfield. 340 Bridge St. | 1914 815 Center St. |
| 1896 Boyd, James Van Wagner...Springfield. 24 Oxford St. | 1906 Brooks, Edith May.....Boston. 483 Beacon St. |
| 1885 Boyd, Samuel George.....San Francisco, Calif. | 1874 Brooks, Lawton Stickney Springfield. |
| 133 Geary St. | 1913 128 Chestnut St. |
| 1911 Boyden, Arthur Henry...Worcester. 875 Main St. | 1890 Brooks, William Allen Boston. |
| 1901 Boyer, Joseph Napoleon...Springfield. 577½ Main St. | 1893 Brough, David Dandie....Boston. City Hall Annex. |
| 1906 Boyle, Jeremiah Joseph...Cambridge. | 1899 Broughton, Arthur Nicholson Jamaica Plain (Boston). |
| 1431 Cambridge St. | 10 Roonoke Av. |
| 1903 Boyle, John Francis.....Lowell. 32 Whipple St. | 1878 Broughton, Henry White...Jamaica Plain (Boston). |
| 1902 Brace, George Wells.....Westfield. 5 Woronoco Av. | 1996 Brousseau, William Gilbert...Cambridge. 2222 Mass. Av. |
| 1886 Brackett, Elliot Gray.....Boston. 166 Newbury St. | 1911 Brown, Arthur Alloysius...Worcester. 744 Main St. |
| 1895 Bradford, Cary Carpenter...Southbridge. 67 Main St. | 1910 Brown, Arthur Linwood...Winchester. Office, Boston. |
| 1873 Bradford, Edward Boston. 133 Newbury St. | 419 Boylston St. |
| Hickling | 1894 Brown, Daniel Joseph.....Springfield. 317 Main St. |
| 1878 Bradford, Henry Wolfeborough, N. H. | 1898 Brown, Edward Wells.....Northampton. 39 Main St. |
| Withington | 1883 Brown, Frank Byron.....Dorchester (Boston). |
| 1906 Brady, Frank Robert....Lowell. 8 Merrimack St. | 529 Washington St. |
| 1903 Brady, James Francis.....Boston. 599 Tremont St. | 1904 Brown, George Christopher...Worcester. |
| 1908 Brady, Joseph Edward....Brookton. 231 Main St. | 112 Franklin St. |
| 1912 Brady, William Francis...Holyoke. 348 Dwight St. | 1917 Brown, Henry Seabury....Providence, R. I. |
| 1871 Bragdon, George Albert Middletown, Conn. | R. I. Hospital. |
| 1906 | 1907 Brown, Lloyd Thornton...Boston. 372 Marlboro' St. |
| 1890 Bragdon, Horace Elwood...East Boston (Boston). | 1869 Brown, Marshall Lebanon Address unknown. |
| 7 Central Sq. | 1908 |
| 1894 Bragg, Frank Adelbert...Foxborough. School St. | 1893 Brown, Martin Millard....North Adams. |
| 1902 Bragg, Leslie Raymond...Webster. 124 Main St. | 112½ Main St. |
| 1884 Brainerd, John Bliss.....Brookline. Office, Boston. | 1873 Brown, Orland Jonas.....North Adams. 112 Main St. |
| 419 Boylston St. | 1902 Brown, Percy.....Boston. 155 Newbury St. |
| 1907 Brainerd, Walter Scott...Bradford (Haverhill). | 1914 Brown, Ralph Neally.....Malden. 1 Concord St. |
| Office, Haverhill. | 1915 Brown, Roy Farrington...Fall River. 878 Rock St. |
| 91 Merrimack St. | 1906 Brown, Wallace Everett...North Adams. Berkshire Hills Sanatorium. |
| 1909 Brant, Austin.....Boston. 483 Beacon St. | 1888 Brown, Wilfred Gardner...Plymouth. 4 North St. |
| 1915 Brassil, Timothy Francis...Cambridge. 297 Broadway. | 1908 Brown, William James....Boston. 1109 Boylston St. |
| 1903 Brayton, Roland Walker...Dorchester (Boston). | 1909 Brown, William John....Reading. 18 Salem St. |
| 693 Washington St. | 1914 Browne, William Edward...Boston. 877 Beacon St. |
| 909 Brearton, Edward John...Dorchester (Boston). | 1881 Browne, William Tyler...Norwich, Conn. |
| 2 Pearl St. | 275 Broadway. |
| 1885 Breck, Samuel.....Middleboro. Office, Boston. | 1898 Brownrigg, Albert Nashua, N. H. Highland Springs Sanitarium. |
| 238 Newbury St. | 1888 Brownrigg, John Roxbury (Boston). |
| 1901 Breck, Nathaniel Pope....Lynn. 9 Washington Sq. | Sylvester 16 Delle Av. |
| 1910 Breen, James Henry.....Hudson. 164 Main St. | 1895 Bruce, Daniel Angus.....Atlantic (Quincy). |
| 1911 Bremer, John Lewis.....Boston. 416 Beacon St. | 1917 Bruce, Jacob Baldwin....Boston. |
| 1887 Brennan, John Joseph...Worcester. 390 Main St. | 496 Commonwealth Av. |
| 1902 Brennan, Joseph { Lowell, 45 Fort Hill Ave. | 1896 Bruce, John Angus.....Everett. 699 Broadway. |
| 1918 Thomas Louis { | 1913 Brunelle, Arthur Lord...New Bedford. |
| 1913 Breslin, John George.....Boston. | 1498 Acushnet Av. |
| 514 Commonwealth Av. | 1898 Brunelle, Pierre.....Lowell. |
| 1914 Bresnihan, Frank Nesdel...Cambridge. 252 Harvard St. | 10 East Merrimack St. |
| 1893 Brewster, George Boston. 213 Beacon St. | 1917 Bryan, William Alvin....Hathorne (Danvers). |
| Washington Wales | State Hospital. |
| 1898 Brickett, Beatrice Hannah, Springfield. 175 State St. | 1893 Bryant, Alice Gertrude...Boston. 502 Beacon St. |
| 1907 Brickley, William Joseph. { Boston. | 1906 Bryant, Clarence Edmund...Hyde Park (Boston). |
| 1918 { 486 Commonwealth Ave. | 101 Highland St. |
| 1912 Brides, Arthur Edward...Brookton. 101 Main St. | 1901 Bryant, Frederick.....Worcester. 778 Main St. |
| 1899 Bridgman, Burt Nicholas...Uzumbe, Morison's Post. | 1892 Bryant, Giles Waite....West Somerville (Somerville), 36 College Av. |
| Natal, S. Africa. | 1911 Bryant, John.....Boston. 338 Marlboro' St. |
| 1893 Briggs, Charles Albert...Assonet (Freetown). | 1902 Bryant, John Edmund...Haverhill. |
| 1880 Briggs, Edward Cornelius...Chestnut Hill (Newton). | 50 Merrimack St. |
| Office, Boston. | 1874 Bryant, Lewis Lincoln...Cambridge. 354 Harvard St. |
| 129 Marlboro' St. | 1909 Bryant, Mason David....Lowell. 8 Merrimack St. |
| 1883 Briggs, Frederick Boston. | 1909 Bucholz, Carl Hermann...Cambridge. Office, Boston. |
| Melanchton 56 Bay State Road. | 139 Beacon St. |
| 1917 Briggs, Joseph Emmons...Boston. 477 Beacon St. | 1893 Buck, Augustus Walker...Fall River. 252 Pine St. |
| 1899 Briggs, Lloyd Vernon....Boston. 64 Beacon St. | 1914 Buck, Clifton Leon.....Danvers. 35 High St. |
| 1903 Brigham, Clarence Sumner...Leominster. 61 Pearl St. | 1882 Buck, Howard Mendenhall...Boston. 857 Beacon St. |
| 1868 Brigham, Edwin Howard...Brookline. Office, Boston. | 1899 Buck, Maurice Allen....Billerica. |
| 8 The Fenway | 1917 Buck, William Edgar....Wilmington. Church St. |
| 1912 Brigham, Francis Gorham...Boston. 35 Bay State Rd. | 1914 Buckley, Daniel Joseph...Arlington. 240 Broadway. |
| 1907 Brigham, Fred Clayton...Springfield. 349 State St. | |
| 1907 Bright, James Cooper....Fall River. | |
| 710 South Main St. | |
| 1915 Brindamour, Joseph Holyoke. 81 High St. | |
| Edmond | |
| 1906 Brindisi, Rocco.....Boston. 149 Richmond St. | |
| 1917 Bristol, De Los Indson, Jr...Boston. 24 McLean St. | |

- 1912 Casey, John Francis.....Allston (Boston).
94 Franklin St.
- 1916 Cass, Frank Ozro.....Provincetown.
284 A Commercial St.
- 1908 Casselberry, Clarence
Marmaduke Brookline, Office, Boston.
1075 Boylston St.
- 1912 Cassels, Louis Raymond....Worcester. 60 Franklin St
- 1908 Cassidy, James Joseph.....Lowell.
10 East Merrimack St.
- 1913 Castleman, Philip.....Boston. 483 Beacon St.
- 1914 Caswell, Bertram Horace....Somerville. 196 Broadway.
- 1910 Caswell, Walter Emery....Campello (Brockton).
1147 Main St.
- 1903 Caulfield, Thomas Edward Woburn. 14 Church Av.
- 1897 Cavanagh, Charles
Dorchester (Boston).
19 Richmond St.
- 1905 Cavanaugh, Thomas
Russell Holyoke. 245 Maple St.
- 1905 Celce, Frank Frederick....Holyoke. 264 Maple St.
- 1905 Celce, Jean Henriette....Holyoke. 264 Maple St.
- 1909 } Ceconi, John Aloysius { Dorchester (Boston).
1915 } 544 Washington St.
- 1913 Chace, Fenner Albert.....Fall River.
373 North Main St.
- 1888 Chadbourne, Arthur
Boston. 193 Beacon St.
- 1917 Chadwell, Orville Rogers..Jamaica Plain (Boston).
793 Center St.
- 1895 Chadwick, Henry Dexter...Westfield.
State Sanatorium.
- 1916 Chalfen, Samuel Edward...Cambridge.
1129 Cambridge St.
- 1906 Chalmers, Hattie Elizabeth..Marlborough.
32 West Main St.
- 1908 Chalmers, Robert.....Woburn. 49 Pleasant St.
- 1872 Chamberlain, Myron Levi..Boston.
482 Commonwealth Av.
- 1895 Chamberlain, William
Eugene Rutland.
- 1914 Chamberlin, Harold
Augustus Newtonville (Newton).
111 Kirkstall Rd.
- 1907 Champion, Merrill Edwin...Wollaston (Quincy).
50 Phillips St.
- 1905 Chandler, Clarence Luther..Fitchburg. 44 Prichard St.
- 1915 Chandler, Harold Beckles...West Newton (Newton).
51 Winthrop St.
- 1883 Chandler, Henry Beckles...West Newton (Newton).
Office, Boston.
34½ Beacon St.
- 1888 Chandler, Norman Fitch...Medford. 82 High St.
- 1911 Chandler, Thomas Evans....Boston. 19 Bay State Rd.
- 1873 } Channing, Walter..... { Brookline. Boylston St.
1878 } and Chestnut Hill Av.
- 1895 Chapin, Clifford Samuel....Great Barrington.
321 Main St.
- 1891 Chapin, Delia Lucretia....Springfield. 313 State St.
- 1906 Chapin, Laurence Dudley...Springfield. 20 Maple St.
- 1886 Chapin, Walter Henry....Springfield. 675 State St.
- 1915 Chapin, William Andrew
Robertson Springfield Hospital.
Springfield. 174 State St.
- 1899 Chapman, Charles
Ratchford Springfield. 3 Washington Sq.
- 1917 Chaput, Lucien Romeo....Haverhill.
Fisheville P. O.
- 1913 Charbonneau, Noe
Napoleon Grafton. 855 Broad St.
- 1886 Charles, Orlando
Warrington Bryantville (Pembroke).
15 Irving St.
- 1900 Charteris, Mary Alena....Worcester. 15 Irving St.
- 1908 Chase, Charles Otis.....Watertown.
51 Mt. Auburn St.
- 1900 Chase, Edwin Llewellyn...Shrewsbury.
- 1908 Chase, Gilman Leeds....Clinton. 215 High St.
- 1907 Chase, Harrison Ayer....Brookton. 231 Main St.
- 1909 Chase, Heman Baker.....Hyannis (Barnstable).
Main St.
- 1886 Chase, Heman Lincoln....Brookline. 126 Harvard St.
- 1902 Chase, Henry Melville....Boston. 409 Marlboro' St.
- 1855 Chase, Irah Eaton †1897 Haverhill. 59 Park St.
- 1915 Chase, Joseph, Jr.....Weymouth. 655 Broad St.
- 1902 Chase, Walter Greenough...Boston. 279 Marlboro' St.
- 1914 Cheever, Austin Walter....Mattapan (Boston).
Office, Boston.
510 Commonwealth Av.
- 1886 Cheever, Clarence Alonzo..Mattapan (Boston).
1531 Blue Hill Av.
- 1902 Cheever, David.....Boston. 355 Marlboro' St.
- 1891 Chinery, William Elisha....Boston. 222 Huntington St.
- 1886 Cheney, Frederick
Edward Concord, Office, Boston.
64 Commonwealth Av.
- 1905 Chesley, Alfred Ervan....Lawrence. 477 Essex St.
- 1917 Chisholm, Lawrence
Chesley...Salem. 111 Federal St.
- 1906 Chisholm, Miles Dudley....Westfield. 128 Elm St.
- 1900 Choate, Horace Henry....Gloucester. 80 Middle St.
- 1903 Cholterson, Herbert.....West Somerville (Somerville). 94 College Av.
- 1902 Christian, Henry Asbury...Boston. 252 Marlboro' St.
- 1908 Christiernin, Charles
East Orange, N. Y. Office,
Leonard New York, N. Y.
1 Madison Av.
- 1915 Chronquest, Alfred Peter..Hathorne (Danvers).
State Hospital.
- 1895 Church, Charles Albert....Millbury. Elm St.
- 1912 Church, Claude Henry....Fitchburg. Burlbank
Hospital.
- 1918 Churchill, Anna Quincy....Dorchester (Boston).
32 Percival St.
- 1906 Churchill, John Darling...Plymouth. 63 Court St.
- 1895 Chute, Arthur Lambert....Boston. 350 Marlboro' St.
- 1888 Cilley, Daniel Plummer....Westborough.
30 East Main St.
- 1913 Claffy, John McMahon....Springfield.
183 North Main St.
- 1891 Clancy, William Henry....East Cambridge
(Cambridge). 80 Otis St.
- 1900 Clap, Edmund Wright.....Boston.
390 Commonwealth Av.
- 1892 Clapp, Frank Horace.....North Grafton (Grafton).
1898 Clark, Albert Ulysses
Westborough.
Franklin 10 Parkman St.
- 1869 Clark, David †1905 Springfield. 155 Long Hill.
- 1916 Clark, De Witt Scoville....Salem. 32 Washington Sq.
- 1901 Clark, Edward James....Lowell. 219 Central St.
- 1901 Clark, Ezra Warren †1914 Brockton. 3 Garden Road.
- 1913 Clark, Frank Robinson....Newtonville (Newton).
227 Walnut St.
- 1901 Clark, Frederick Timothy...Westfield. 80 Elm St.
- 1893 Clark, George Henry.....Holyoke. 441 High St.
- 1905 Clark, George Oliver.....Boston. 142 Beacon St.
- 1911 Clark, Harry Ainsworth....North Andover.
47 Prescott St.
- 1906 } Clark, John Donovan.....Abington, Conn.
1913 } 20 Scott St.
- 1893 } Clark, Joseph Eddy.... { Utica, New York.
1918 } 20 Scott St.
- 1886 Clark, Joseph Payson....Boston. 71 Marlboro' St.
- 1880 Clark, Julius Stimpson
Melrose. 109 Myrtle St.
†1911
- 1889 Clark, Leonard Brown....Waverley (Belmont).
36 Sycamore St.
- 1897 Clark, Mary Wilson.....Medford. 4 Washington St.
- 1892 Clark, Sidney Avery.....Northampton. 124 Main St.
- 1903 Clark, Thomas Francis....Taunton. 62 Broadway.
- 1910 Clark, Webster Kimball....Greenfield. 6 Franklin St.
- 1907 Clark, William Irving, Jr..Worcester. 37 Pearl St.
- 1914 Clarke-MacLeod, Emily....Boston. 260 Newbury St.
- 1901 Clarke, Genevieve.....Cambridge. 825 Mass. Av.
- 1911 Clarke, Harry Carver.....Lynn.
180 South Common St.
- 1904 Clarke, Iuz Louise.....Cambridge. 825 Mass. Av.
- 1888 Clarke, Israel James....Haverhill. 112 Emerson St.
- 1910 Clarke, Joshua Williams...Attleborough. 48 Bank St.
- 1902 Clarke, Louis Henry.....Holyoke. 282 Maple St.
- 1915 Clarke, Mary Ella.....Malden. 629 Main St.
- 1915 Clarke, Willis Earl.....Malden. 490 Pleasant St.
- 1897 Cleary, James.....Cambridge. 770 Mass. Av.
- 1914 Cleary, Robert Emmett....Holyoke. 1049 Dwight St.
- 1901 Cleaves, Ezra Eames....Rockport. 27 Main St.
- 1908 Cleaves, Helen Frances
Palmer.
Taft Monson State Hospital

- 1911 Cleveland, Heber Howe....Wellesley Hills. Office,
Boston. 205 Beacon St.
- 1875 Cluff, Leander Albert.....Boston. 427 Shawmut Av.
- 1901 Clodman, Harry.....Brookton. 33 Clinton Av.
- Radcliffe
- 1911 Clymer, George, Jr.....Boston. 126 Bay State Rd.
- 1892 Cobb, Albert Crocker.....Marion. Front St.
- 1895 Cobb, Carolus Melville.....Lynn. 10 Nahant St.
- 1907 Cobb, Chester Thompson..Northampton. 91 South St.
- 1893 Cobb, Farrar.....Boston. 419 Boylston St.
- 1889 Cobb, Frederic Codman.....Boston. 11 Marlboro' St.
- 1912 Cobb, Gardner Nathan.....Hingham. 1. S. N. T. C.
- 1897 Cobb, Oliver Warren.....Easthampton. 59 Main St.
- 1914 Coburn, Harry Ray.....Tewksbury.
- 1904 Coburn, Horace Fordyce...Lowell. 9 Central St.
- 1898 Cochran, William James....Natick. 50 West Central St.
- 1914 Cochrane, Robert Carlyle..Boston. 96 Bay State Rd.
- 1905 Cockett, Marguerite.....Am. Fund for French
Wounded.
- Standish
- L'Alcazar Av. des Champs
Elysees. Paris, France.
- 1895 Codman, Ernest Amory....Boston. 227 Beacon St.
- 1912 Cody, Edmond Francis.....New Bedford.
- 105 South 6th St.
- 1912 Cody, Harry Clinton.....New Orleans, La.,
163 Dryades St.
- 1916 Cody, Peter White.....Lawrence. 229 Andover St.
- 1885 Coffin, Arthur Baylies.....Dorchester (Boston). Office
Boston. 159 Devonshire St.
- 1907 Coffin, Frank Herbert.....Haverhill. 91 Emerson St.
- 1896 Coffin, Rockwell Augustus..Boston. 234 Clarendon St.
- 1887 Cogan, Joseph Ambrose.....Boston. 419 Boylston St.
- 1892 Cogswell, George Proctor....Cambridge. 18 Garden St.
- 1896 Cogswell, William.....Haverhill.
- 151 Merrimack St.
- 1917 Cohen, Joseph Powitzer....Brookline.
- 105 Winchester St.
- 1916 Cohen, Milton Michael....Roxbury (Boston).
- 40 Gaston St.
- 1918 Cohen, Samuel Adams.....Roxbury (Boston). Office,
Boston. Fort Standish.
- 1910 Colberg, Peter Albert.....Worcester. 17 Stebbins St.
- 1897 Colburn, Harry Hayford....Boston. 103 Mt. Vernon St.
- 1912 Cole, Arthur Judson.....Holbrook.
- North Franklin St.
- 1892 Collier, Lawrence Henry Jamaica Plain (Boston).
Goodwin 212 South St.
- 1915 Collins, Frank Laforest....Rowley. Main St.
- 1910 Collins, Joseph Daniel.....Northampton. 90 Main St.
- 1903 Collins, Richard.....Waltham. 837 Main St.
- 1899 Collins, William James.....Northampton. 90 Main St.
- 1908 Collins, William Morris....Lowell. 267 Central St.
- 1918 Colmes, Abraham.....Roxbury (Boston).
572 A Warren St.
- 1881 Colt, Henry.....Pittsfield. 193 South St.
- 1879 Comey, Perley Pierce.....Augusta, Ga.
872 Hillman St.
- 1883 Conant, William Merritt...Boston.
- 486 Commonwealth Av.
- 1913 Condrick, John Joseph.....Brookton. 68 Main St.
- 1883 Cone, Dwight Eleazer.....Fall River.
- 938 South Main St.
- 1913 Conley, Brainard Francis..Malden. 203 Main St.
- 1909 Conlin, Robert Emmett.....Woburn. 353 Main St.
- 1906 Conlon, Frank Aloysius....Lawrence. 301 Essex St.
- 1891 Connell, Arthur Irving....Fall River.
- 456 South Main St.
- 1909 Connelly, John Edward....Brookline. 9 Sewall Av.
- 1902 Conner, Homer Leigh.....Haverhill. 85 Emerson St.
- 1897 Connor, Charles Frank....New Bedford.
- 11 North Orchard St.
- 1902 Conro, Arthur Clifton....Attleborough.
- 15 Mechanic St.
- 1906 Conroy, Edward Cornelius..Andover. Office,
Lawrence. 263 Essex St.
- 1895 Conroy, Peter John.....Everett. 355 Broadway.
- 1915 Constans, Frank Elmore....Brookton. 7 Main St.
- 1874 Clement, George Wilmot...Roxbury (Boston).
275 Warren St.
- 1879 Cook, Charles Henry.....Natick. 35 West Central St.
- 1914 Cook, James Henry.....Braintree.
- 346 Washington St.
- 1914 Cook, John William.....Mansfield.
- 114 North Main St.
- 1905 Cook, Philip Howard.....Worcester. 771 Main St.
- 1893 Cook, Snow Parker.....Gloucester. 132 Main St.
- Freeman
- 1885 Coolidge, Algernon.....Brookline. Office, Boston.
613 Beacon St.
- 1893 Coolidge, John Nelson.....New York, N. Y.
- 1 Madison Av.
- 1901 Coolidge, Sumner.....Middleborough. Lakeville
State Sanatorium.
- 1898 } Coon, George Bailey.....Tampa, Fla.
- 1903 }
- 1907 } Coon, William Hall.....Haverhill. 22 Park St.
- 1915 }
- 1912 Cooney, Margaret Blanche..Haverhill. 67 Winter St.
- 1890 Cooney, Michael Edward..Northampton. 59 Main St.
- 1892 Cooper, Almon.....Brookline. 114 Park St.
- 1915 Copeland, Elmer Humphrey..Northampton. 168 Elm St.
- 1906 Corbett, Jeremiah Joseph..Malden. Office, Boston.
520 Beacon St.
- 1911 Corcoran, George Bartlett..West Springfield.
30 Park St.
- 1909 Corcoran, John Gilbert....Hamilton.
- 1905 Corey, Frederick Hall.....Rockland. 261 Union St.
- 1907 Coriat, Isador Henry.....Boston. 416 Marlboro' St.
- 1913 Cornish, Solon Washington..Everett. 79 Winthrop St.
- 1907 Cornwall, Andrew Payne....Brookline. Office, Boston.
535 Beacon St.
- 1904 Cort, Parker Martin.....Springfield. 691 State St.
- 1917 Cosgrove, Joseph Justin....Westfield. State
Sanatorium.
- 1906 } Costello, John Henry... {Dorchester (Boston).
- 1913 }
- 1912 Cotter, Timothy Francis....Haverhill. 116 Main St.
- 1917 Cottle, Louis Albert.....Worcester. 50 Orange St.
- 1897 Cotton, Frederic Jay.....Boston.
- 520 Commonwealth Av.
- 1895 Coues, William Pearce.....Boston. 31 Mass. Av.
- 1892 Councilman, William.....Boston.
- Thomas Office, Roxbury (Boston).
240 Longwood Av.
- 1911 Coupal, James Francis....Roxbury (Boston).
Office, Boston.
1091 Boylston St.
- 1915 Courie, Wadie Fadoul....Detroit. Mich.
198 Orleans St.
- 1893 Courtney, Joseph William..Boston.
- 94 Bay State Road.
- 1892 Cousins, Nicholas William..Waltham. 17 Crescent St.
- 1872 Cowles, Edward.....1910 Plymouth. 8 Sever St.
- 1886 Cowles, Frank Augustus....Beverly. 276 Cabot St.
- 1910 Cowles, William Lee.....Boston. 497 Beacon St.
- 1857 Cowles, William Norman..Jamaica Plain (Boston).
44 Southbourne Rd.
- 1907 Cox, Ann Caroline.....North Weymouth.
- Hunt's Hill.
- 1914 Cox, Oscar Francis.....Boston. 1081 Boylston St.
- 1905 Cox, Simon Francis.....New Haven. Conn.
New Haven Hospital.
- 1913 Cox, Stanley Cullen.....Holyoke. 242 Maple St.
- 1901 Coyne, Thomas Joseph....Roxbury (Boston).
636 Dudley St.
- 1914 Crabtree, Ernest Granville..Brookline. Office, Boston.
87 Marlboro' St.
- 1889 Cragin, George Arthur.....Boston. 18 Hereford St.
- 1891 Craim, John Wesley.....Colrain.
- 1915 Crandall, Walter Midkiff..Lawrence. 332 Broadway.
- 1896 Crandell, Arthur Richmond..Taunton. 48 Church Green.
- 1899 Crandon, Le Roi Goddard..Boston.
- 366 Commonwealth Av.
- 1906 Crane, Bayard Taylor.....Rutland. Maple Av.
- 1909 Crane, Clarence.....Boston. 224 Huntington Av.
- 1899 } Crawford, Francis Xavier. {Boston.
1907 }
- Deer Island Hospital.
- 1910 Crawford, Frank Wallis...Holbrook.
- North Franklin St.

- 1918 Crawford, Lawrence Pears. Wollaston (Quincy).
75 Elm Ave.
1885 Crawford, Sarah Marcy Newton Center (Newton).
1911 194 Ward St.
1914 Creamer, William Henry. Fall River, 466 N. Main St.
1908 Creely, Oscar Slade. Watertown.
63 Mt. Auburn St.
1906 Cregg, Francis Aloysius. Lawrence. 477 Essex St.
1907 Crispo, Peter Timothy. Fall River. 439 Bedford St.
1900 Crittenden, Samuel Wright Chelsea. Soldiers' Home.
1894 Croacher, Anna Wood. New Bedford. 51 Fifth St.
1892 Crocker, Benton Pulsifer. Foxborough. South St.
1904 Crocker, Louis Allen. Brewster.
1887 Crocker, Susan Elizabeth Los Angeles, Calif.
191901 549 W. 34th St.
1891 Crockett, Eugene Anthony. Boston. 298 Marlboro' St.
1898 Croft, Benjamin Pomeroy. Bernardston.
Office, Greenfield.
17 Federal St.
1917 Croissant, Charles Augustus Worcester. 8 Blair St.
1913 Croke, Louis Ward. Dorchester (Boston).
22 Mather St.
1914 Cronin, Herbert Joseph. Cambridge. 69 Concord Av.
1899 Cronin, Michael John. Roxbury. Office, Boston.
520 Beacon St.
1898 Cronin, Thomas Joseph. Worcester. 49 Pleasant St.
1909 Crosby, Arthur Hallam. Boston.
520 Commonwealth Ave.
1903 Crosby, Leander Marshall. Wakefield. Office, Boston.
419 Boylston St.
1910 Crosby, Walter Hiram. Brighton (Boston).
305 Faneuil St.
1912 Cross, Albert Elmer. Worcester. 390 Main St.
1899 Cross, William Patrick. South Boston (Boston).
491 Broadway.
1881 Croston, John Francis. Haverhill. 83 Emerson St.
1885 Crowell, Samuel. Dorchester (Boston).
8 Monadnock St.
1897 Crowley, Jeremiah Francis. Adams. 15 Park St.
1911 Cuddy, James Francis. Athol. 585 Main St.
1915 Cudworth, Clarence Duane Miller's Falls (Montague).
1887 Culbertson, Emma Valeria Boston. 33 Newbury St.
Pintard Bicknell
1916 Cullen, Charles Andrew. Hyde Park (Boston).
1273 Hyde Park Av.
1899 Cummin, John White. Boston. 9 Mass. Av.
1901 Cummings, Alvah Cochran. Newton.
337 Washington St.
1911 Cummings, Dana Frank. Cherryfield, Me.
1876 Cummings, Edwin Francis. Revere. Office, Boston.
43 State House.
1904 Cummings, John Joseph. Worcester. 53 Pleasant St.
1901 Cummings, Morton Everett Malden. 358 Pleasant St.
1888 Cummings, Mott Alvah. Winchester. 69 Church St.
1905 Cummins, Loretta Joy. Boston.
45 Bay State Road.
1913 Cunningham, Allan Rowe. Boston.
45 Bay State Road.
1903 Cunningham, John Boston. 46 Gloucester St.
Henry, Jr.
1914 Cunningham, Joseph Cambridge. 959 Mass. Av.
Henry
1914 Cunningham, Thomas Cambridge. 5 Ellery St.
Edward, Jr.
1905 Curley, Clarence Proctor. Provincetown.
Commercial St.
1917 Curran, George Lally. North Adams.
63 Eagle St.
1914 Curran, John Francis. Worcester. 505 Pleasant St.
1905 Curran, Simon Francis. Dorchester (Boston).
104 Norfolk St.
1917 Currie, Inez Margaret. Worcester.
Memorial Hospital.
1912 Currier, Cyrus Richardson. Sandwich. Main St.
1900 Currier, William Eugene. Leominster. 87 Merriam Av.
1890 Currier, William Hale. Pittsfield. 69 Linden St.
1893 Curry, Edmund Farnham. Fall River. 499 Hanover St.
1908 Curry, Ernest Francis. Sagamore (Bourne).
Keith Block.
- 1915 Curtin, John Francis. North Abington
(Abington). 4 Plymouth St.
1909 Curtis, Charles Leverett. Salem. 78 Federal St.
1887 Curtis, Francis George. Chestnut Hill (Newton).
399 Hammond St.
1910 Curtis, Harlan Fuller. East Longmeadow (Long-
meadow). South Main St.
1890 Curtis, Henry Fuller. Somerville. 145 Perkins St.
1899 Curtis, William Goodwin. Wollaston (Quincy).
10 Grand View Av.
1906 Cushing, Arthur Alden. Brookline. 108 Marion St.
1913 Cushing, Harvey. Brookline. Office, Roxbury
(Boston). Peter Bent
Brigham Hospital.
1881 Cushing, Hayward Warren. Boston.
70 Commonwealth Av.
1887 Cushman, Andrew Bernard. South Dartmouth
(Dartmouth).
1882 Cushman, George Thomas. Roxbury (Boston).
46 Dudley St.
1911 Cushman, Howard Lewis. Methuen. 70 Broadway.
1906 Cusick, Lawrence Francis. Nahant. Office, Boston.
99 Newbury St.
1898 Cusick, Thomas Francis. Taunton. 126 Weir St.
1898 Cutler, Charles Norton. Chelsea.
309 Washington Av.
1872 Cutler, Elbridge Gerry. Boston. 214 Beacon St.
1916 Cutler, Elliott Carr. New York, N. Y.
23 East 33rd St.
1912 Cutler, George David. Boston. 180 Marlboro St.
1914 Cutler, Myron Fred. Webster.
1915 Cutler, Raymond William. Worcester. 62 Coburn Av.
1908 Cutler, Irving Taylor. Winchester. 31 Church St.
1906 Cyr, Emile Edouard. Lawrence. 81 Bradford St.

D

- 1905 Dacey, Cornelius Joseph. Brockton. 12 Cottage St.
1902 Dadmun, Eliza Josephine. Boston. 483 Beacon St.
1904 Dailley, Edward Joseph. Somerville. 46 Bow St.
1918 Daland, Ernest Merrill. Boston. Mass. Gen. Hosp.
1913 Dalton, Charles Howard. Brookline. 405 Harvard St.
1908 Dalton, George Frederick. Springfield. 5 Maple St.
1882 Daly, Bernard Thomas. Roxbury (Boston).
320 Dudley St.
1905 Daly, Jeremiah James. Andover.
Office, North Andover.
106 Main St.
1898 Daly, Timothy Joseph. Lawrence. 62 Bradford St.
1896 Daly, William Joseph. Boston. 31 Mass. Av.
1902 Dame, Fred Russell. South Braintree (Brain-
tree). 1010 Washington St.
1895 Damon, Arthur Llewellyn. North Wilbraham
(Wilbraham). Chapel St.
1906 Dana, Harold Ward. Brookline. Office, Boston.
483 Beacon St.
1891 Dane, John. Jamaica Plain. Office.
Boston. 29 Marlboro' St.
1906 Danforth, Harland Abbott. Cliftondale (Sausus).
276 Lincoln Av.
1878 Daniels, Edwin Alfred. Boston. 302 Newbury St.
1916 Daniels, Ora George. Canton.
Mass. Hospital School
1908 Darling, Arthur Edwin. Lynn. 65 Broad St.
1895 Darling, Charles Balfour. Roxbury (Boston). Office.
Boston. 419 Boylston St.
1894 Darling, Eugene Abraham. Cambridge. 134 Brattle St.
1907 Dascombe, Otho Lee. Waltham. 255 Moody St.
1900 Daudelin, Simon Worcester. 11 Elm St.
Alphonse
1871 Davenport, Bennett Watertown. Office, Boston.
Franklin. 1910 34 School St.
1877 Davenport, Francis Henry. Boston.
390 Commonwealth Av.
1887 Davenport, James Henry. Providence, R. I.
210 Benefit St.
1918 Davidson, Alfred. Chelsea. 155 Chestnut St.
1906 Davidson, Henry James. Springfield. 26 Maple St.
Duff
1891 Davidson, Kallman Meyer. Roxbury (Boston). Office.
Boston. 31 McLean St.

- 1895 Downey, Charles John....Springfield. 317 Main St.
 1908 Downey, Henry Arthur....Mittineague (West Spring-
 field). 388 Westfield St.
 1906 Downing, Andrew Francis...Cambridge. 325 Huron Av.
 1897 Downing, Franklin Chace...Stockbridge. East Main St.
 1909 Drake, Richard Alvin.....West Medford (Medford).
 6 Irving St.
 1883 Drake, William Abram....North Weymouth
 (Weymouth).
 1901 Draper, Alexis Lumb.....Dorchester (Boston).
 1107 Washington St.
 1885 Drew, Charles Aaron.....Worcester. City Hospital.
 1904 Drew, Frederick Prescott..East Dedham (Dedham).
 1895 Drew, Maria Emma.....Atlantic (Quincy).
 89 Newbury Av.
 1902 Dreyfus, Edna Weil.....Brookline. 30 Amory St.
 1917 Driscoll, DeCoursey John...Lynn. 12 Whiting St.
 1897 Drohan, James Henry.....Brockton. 204 Main St.
 1888 Drumme, Nicholas Daniel..Dorchester (Boston).
 533 Washington St.
 1904 Drury, Dana Warren.....Roxbury (Boston).
 Office, Boston.
 407 Marlboro' St.
 1915 Drury, John Nelson.....Lowell. 8 Central St.
 1906 Dubois, Eoline Church.....Springfield. 293 Bridge St.
 1917 Ducharme, Alphonse.....Worcester.
 Napoleon
 20 Hamilton St.
 1901 Duckering, Florence West..Boston. 520 Beacon St.
 1900 Duckering, William West...Dorchester (Boston).
 2 Warner St.
 1908 Ducey, William Dwyer.....Brockton. 13 Clinton Av.
 1894 Dudley, Augustus William..Cambridge. 1740 Mass. Av.
 1891 Duff, John.....Charlestown (Boston).
 5 Dexter Row.
 1916 Duff, John, Jr.....Charlestown. (Boston).
 5 Dexter Row.
 1886 Duggan, John Thomas....Worcester.
 226 Southbridge St.
 1906 Dunbar, Francis Herbert..Mansfield. P. O. address
 Boston. 46 Cornhill.
 1893 Dunbar, Frank Collins....Roxbury (Boston).
 9 Beethoven St.
 1914 Dunham, Adeline Frances..Cambridge. 881 Mass. Av.
 1894 Dunham, Henry Bristol....Glen Gardner, N. J.
 N. J. Sanatorium.
 1903 Dunn, Charles Hunter....Boston. 178 Marlboro' St.
 1894 Dunn, Charles Stein.....Haverhill. 133 Main St.
 1913 Dunn, William Ambrose....Boston. 154 Richmond St.
 1885 Durant, Charles Edwin....Haverhill. 105 Emerson St.
 1879 Durell, Thomas Moulton...Somerville.
 131 Highland Av.
 1866 Durgin, Samuel Holmes..Duxbury. Millbrook P. O.
 †1916
 1867 Dutton, Charles.....Wakefield. 33 Avon St.
 1916 Dutton, Frank Kingsley...Chicopee Falls (Chicopee).
 29 Arlington St.
 1906 Dutton, Julius Maltby....Westfield. 108 Elm St.
 1902 Dutton, Richard.....Wakefield. 33 Avon St.
 1890 Dwight, Edwin Welles....Boston. 87 Milk St.
 Room 46
 1896 Dwight, Henry Leonard...Copperopolis, Calif. Box 27.
 1890 Dwyer, John Edward.....Cambridge. 878 Mass. Av.
 1911 Dwyer, John Edward, Jr..Cambridge. 47 Inman St.
 1905 Dwyer, William Joseph....Boston.
 514 Commonwealth Ave.
 1882 } Dyer, Ebenezer Alden...{ Whitman.
 1904 } 506 Washington St.
E
 1884 Eames, George Franklin...Boston. 249 Newbury St.
 1912 Earle, George Henry.....Boston. 1138 Boylston St.
 1916 Easter, Edna Frances....Arlington. 130 Mass. Av.
 1901 Eastman, Alexander Crane..Springfield. 6 Chestnut St.
 1906 Eastman, Theodore.....South Berwick, Me.
 Jewett Office, Boston.
 71 Marlboro' St.
 1900 Eaton, Elwood Tracy....Boston. 209 Newbury St.
 1915 Eaton, Harold Burney....Boston. 222 Marlboro' St.
 1914 Eaton, Henry Douglas....Stockbridge.
 1906 Eaton, William Edward....U. S. Navy.
 1866 Eddy, George Stetson†1909..Newton. 73 Sargent St.
 1917 Edelstein, Samuel.....Roxbury (Boston).
 31 Gaston St.
 1861 Edes, Robert Thaxter†1912 Springfield.
 251 Rimmeron Av.
 1913 Edsall, David Linn.....Milton. Office, Boston.
 80 Marlboro' St.
 1867 Edson, Ptolemy O'Meara..Roxbury (Boston).
 †1904
 36 Elm Hill Av.
 1894 Edwards, William Lthrop..Boston. 33 Gloucester St.
 1897 Egan, John Joseph.....Gloucester. 52 Pleasant St.
 1906 Ebnfried, Albert.....Boston.
 362 Commonwealth Av.
 1887 Ehrlich, Henry.....Boston.
 172 Commonwealth Av.
 1915 Eidam, Carl Hermann....Lawrence.
 334 Prospect St.
 1913 Eisner, Maurice Solomon..Pittsfield. 86 North St.
 1874 Ela, Walter.....†1914 Cambridge. 13 Ash St.
 1907 Elder, Fred Orestes.....Peabody. 18 Chestnut St.
 1885 Eldridge, David Gorham...Dorchester (Boston).
 15 Monadnock St.
 1916 Elkind, Henry Byron.....Worcester. 98 Winter St.
 1906 Ellum, Herbert William...Gardner. 29 Parker St.
 1914 Elliot, Henry Whitney...Belchertown.
 1900 Elliot, Henry Libbey.....Salem. 84 Washington Sq.
 1877 Elliott, John Wheelock....Boston. 124 Beacon St.
 1903 Elliott, Alfred.....Middleborough. Rock St.
 1873 Elliott, Russell Dunson...Boston. 154 Richmond St.
 1908 Ellis, Arthur Henry.....Greenfield. 317 Federal St.
 1905 Ellis, Edward Keith.....Hyde Park (Boston).
 Office, Boston.
 232 Clarendon St.
 1880 Ellis, Frederic Warren....Monson. Oak St.
 1873 Ellis, George Livingstone..Middleborough.
 †1913
 135 Center St.
 1915 Ellison, Daniel James....Lowell. 8 Merrimack St.
 1894 } Ellison, George } Spencer. 158 Main St.
 1916 } Washington }
 1899 Ellsworth, Samuel Walker..Quincy. Office, Boston.
 64 Commonwealth Av.
 1899 Ely, Richard Skinner.....West Townsend
 (Townsend).
 1913 Ely, Theodore Williams...Allston (Boston).
 1126 Commonwealth Av.
 1918 Emard, George Adelbert...Mansfield.
 97 Rumford Av.
 1903 Emerson, Benjamin.....Worcester. 37 Pearl St.
 Kendall
 1873 Emerson, Edward Waldo...Concord. Lowell Road.
 †1917
 1899 Emerson, Ernest Benjamin..Rutland. State Sanatorium.
 1893 Emerson, Francis Patten...Brookline. Office, Boston.
 520 Commonwealth Av.
 1917 Emerson, Frederick Lincoln..Dorchester (Boston).
 50 Hancock St.
 1903 Emerson, George Edward..South Weymouth (Wey-
 mouth). Office, Boston.
 543 Boylston St.
 1893 Emerson, Herbert Clark...Springfield. 177 State St.
 1911 Emerson, Nathaniel Waldo..Jamaica Plain (Boston).
 118 Forest Hills St.
 1916 Emerson, Paul Waldo....Boston.
 86 Bay State Road.
 1900 Emerson, William Robie..Boston. 657 Boylston St.
 Patten
 1900 Emery, George Edwin....Worcester. 280 Lincoln St.
 1909 Emery, William Campbell..Dorchester (Boston).
 430 Columbia Road.
 1870 Emery, William Henry....Roxbury (Boston).
 109 Warwick St.
 1905 Emmons, Arthur.....Dover. Office, Boston.
 Brewster, 2d
 86 Bay State Road.
 1915 Emmons, Henry Manning..Jamaica Plain (Boston).
 19 Burroughs St.
 1904 England, Albert Charles...Pittsfield. 124 North St.
 1912 English, Martin Joseph....Boston.
 514 Commonwealth Av.

1888 Ensworth, William Howard. East Boston (Boston).
 40 Princeton St.
 1894 Erb, Theodore Charles. Boston. 394 Marlboro' St.
 1881 Ernst, Harold Clarence. Jamaica Plain (Boston).
 Office, Roxbury (Boston).
 240 Longwood Av.
 1899 Estabrook, Charles Taylor. Worcester. 390 Main St.
 1912 Eustis, Richard Spelman. Boston. 329 Beacon St.
 1903 Evans, Albert. Boston. 409 Marlboro' St.
 1904 Evans, Miner Harlow. Dorchester (Boston).
 Amos, Jr. Office, Boston.
 248 Newbury St.

1908 Eveleth, Samuel Chester. Marblehead.
 137 Washington St.
 1899 Everett, Eugene Ellsworth. Boston. 427 Marlboro' St.
 1905 Everett, Frederick Luther. Springfield. 10 Chestnut St.
 1880 Everett, Oliver Hurd. Worcester. 53 Pearl St.
 1865 Everett, Willard. Newton Upper Falls.
 Shepard †1905 20 Summer St.
 1900 Ewing, George Winburn. Middleton. Office, Peabody.
 32 Main St.

F

1906 Fabyan, Marshal. Boston.
 379 Commonwealth Av.
 1889 Fair, John Francis. East Cambridge
 (Cambridge).
 390 Cambridge St.
 1901 Fair, Robert Patrick. Boston. 481 Beacon St.
 1889 Fairbanks, Arthur Willard. Brookline. Office, Boston.
 591 Beacon St.
 1897 Fales, Alonzo Cartland. Middleton. N. S.
 1912 Fallon, Joseph Francis. Brookline. 1 Kendall St.
 1891 Fallon, Michael Francis. Worcester. 390 Main St.
 1880 Farlow, John Woodford. Boston.
 127 Bay State Road.
 1895 Farnham, John Marshall. Worcester. 28 Pleasant St.
 Willoughby
 1903 Farr, Irvin Harris. Holyoke. 179 Chestnut St.
 1915 Farrar, Lonnie Oliver. State Farm (Bridgewater).
 1894 Farrington, Leander. Manchester, N. H.
 Morton 267 River Road
 1893 Faulkner, Herbert Kimball. Keene, N. H. 78 West St.
 1891 Faulkner, William Edward. Boston. 290 Marlboro' St.
 1903 Faunce, Calvin Barstow, Jr. Jamaica Plain (Boston).
 Office, Boston.
 320 Commonwealth Av.
 1905 Faxon, Eudora Winifred. Dorchester Center
 (Boston) State Hosp.
 1892 Faxon, Eudora Meade. Franklin. New Bay Block.
 †1912
 1907 Faxon, Nathaniel Wales. Stoughton. 4 Walnut Av.
 1907 Faxon, William Otis. Stoughton. 4 Walnut Av.
 1897 Fay, Frank Gleason. Worcester. 390 Main St.
 1875 Fay, James Monroe. Northampton. 71 King St.
 1911 Fay, Joseph Henry. Melrose.
 6 West Emerson St.

1888 Fay, William Eastman. Brookline. Office, Boston.
 366 Commonwealth Av.
 1904 Feeley, Charles Phillip. Cambridge. 1033 Mass. Av.
 1914 Feeley, Walter Clarence. Cambridge. 885 Mass. Av.
 1906 Felch, Carrie Innes. Boston. 1069 Boylston St.
 1913 Felch, George Alfred. Boston. 743 Tremont St.
 1906 Felch, Lewis Perley. Boston. 1069 Boylston St.
 1918 Fennelman, Aaron. Boston. 17 Allen St.
 1912 Fennelly, Daniel John. Fall River. 52 Linden St.
 1903 Fennessey, John Francis. Dorchester (Boston).
 15 Adams St.

1915 Fenton, Alfred Archibald. Norwood.
 1905 Fenwick, George Benson. Chelsea. 24 Gardner St.
 1900 } Ferguson, Edward Hugh. Dorchester (Boston).
 1916 } 60 Charles St.
 1901 Ferguson, Robert Henry. East Orange, N. J.
 9 North Munn Av.
 1903 Fernald, Guy Goodwin. Concord Junction
 (Concord). Assabet Av.
 1895 Fernald, Walter Elmore. Waverley (Belmont).
 P. O. Box 344.
 1904 Ferrin, William Warren. Haverhill. 77 Emerson St.

1906 Field, Henry Martyn. Norwood.
 784 Washington St.
 1904 Field, Martin Thomas. Salem. 23 Winter St.
 1900 Finch, George Hardy. Springfield. 310 Main St.
 1904 Finkelstein, Harry. Boston. 342 Haverford St.
 1912 Finkelstein, Nathan. Pittsfield. 86 North St.
 1911 Finlayson, Alan Daniel. Warren, Pa. State Hosp.
 1890 Finn, Edward William. Dedham. 5 Franklin Sq.
 1913 Finnegan, Francis. Fitchburg.

Augustine 14 Longwood Av.
 1913 Finnegan, Philip Joseph. Salem. 92½ Essex St.
 1914 Finnerty, Charles William. Somerville. 761 Broadway.
 1884 Finnigan, Patrick Joseph. Cambridge.
 1412 Cambridge St.
 1904 Fischbein, Louis. Boston. 382 Newbury St.
 1897 Fish, Ernest Clifford. Melrose. 11 Wyoming Av.
 1897 Fish, John Euclid. Canton.

Mass. Hospital School.
 1904 Fish, Louis. Fitchburg. 25 Myrtle Av.
 1878 Fisher, Chester Irving. New York, N. Y.
 †1916 1925 7th Av.

1902 Fisher, Irving Jewell. West Newton (Newton).
 79 Chestnut St.
 1910 Fishman, Maurice. Lowell. 40 Middlesex St.
 1888 Fisk, Arthur Lyman. New York, N. Y.
 41 West 50th St.
 1886 Fiske, Eustace Lincoln. Fitchburg. 20 Prichard St.
 1891 Fitz, George Wells. Boston. P. O. address,
 Peconic, N. Y.

1913 Fitz, Reginald. Roxbury (Boston).
 P. R. Brigham Hospital.
 1898 Fitzgerald, Clara Pauline. Worcester. 137 Pleasant St.
 1892 Fitzgerald, James Bernard. Boston. 393 Mass. Av.
 1906 Fitzgerald, John Joseph. Haverhill. 111 Emerson St.
 1903 Fitzpatrick, John Joseph. Charlestown (Boston).
 50 High St.
 1910 Fitz-Simmons, Henry. Jamaica Plain (Boston).
 Joseph Office, Boston. 272 Newbury St.

1902 Flagg, Elisha. Boston.
 199 Commonwealth Av.
 1909 Flagg, Harry Howard. Charlestown (Boston).
 30 Elm St.

1913 Flaberty, Edward James. Maynard. 44 Main St.
 1914 Fleet, William Ernest. Cambridge. 9 Columbia St.
 1914 Fleming, Edward Rahn. Medford. 322 Boston Av.
 1904 Fleming, Patrick Joseph. Cambridge. 234 Huron Av.
 1903 Fleming, Peter Joseph. Mattapan (Boston).
 1253 Blue Hill Av

1902 } Fletcher, Robert Swan. Oxford. Charlton St.
 1909 }
 1893 Fletcher, Robert Whitney. South Boston (Boston).
 783 Broadway.
 1905 Flett, Penelope McNaughton Framingham. Box 99.
 1882 Flood, Everett. Palmer.

Monson State Hospital.
 1910 Flournoy, Thomas. Pittsfield. 742 North St.
 1905 Floyd, Cleveland. Boston. 246 Marlboro' St.
 1893 Flynn, John Joseph. Pittsfield. 183 North St.
 1902 Flynn, John Joseph. Worcester. 10 Grand St.
 1916 Fobes, Howard Edward. Whitman. 324 Auburn St.
 1883 Fogarty, William Clemmons. Worcester. 93 Chandler St.
 1880 Fogg, Irving Sylvester. Norwood.

†1918 767 Washington St.
 1913 Foley, Thomas Brinsley. Boston. 85 Westland Av.
 1894 Foley, Timothy John. Worcester. 23 Portland St.
 1917 Foot, Nathan Chandler. Milton. Canton Av.
 1910 Forbes, Alexander. Milton. Harland St.
 1893 Ford, John Francis. Roslindale (Boston).
 8 Walter St.

1915 Forhan, Neil Kittredge. North Billerica
 (Billerica).
 1914 Forster, John Ferguson. Holyoke. 277 Suffolk St.
 Cooke
 1901 Forster, Robert William. Lawrence. 279 Broadway.
 1895 Fossate, Elmer Gilman. Ashburnham.
 1914 Foss, George Herbert. Springfield.

530 Summer St.
 1909 Foss, Ralph Emery. Peabody. 97 Main St.

- 1916 Foster, Arthur Neville....Dorchester (Boston).
740 Adams St.
- 1884 Foster, Charles Channey....Cambridge. 8 Elmwood Av.
- 1904 Foster, Ellis Edwin.....New Bedford.
271 Union St.
- 1883 Foster, Horace Kendall....Peabody. 2 Park St.
- 1907 Fowler, John Richard....Spencer. 143 Main St.
- 1911 Fox, Michael Bernard....Worcester. 6 Coral St.
- 1887 Fox, William Yale.....Taunton. 26 Second St.
- 1915 Fraim, Irving William....Macon, Ga. 208 Second St.
- 1894 Frame, Joseph.....Rockland. 39 Webster St.
- 1891 Francis, Carleton Shurtleff, Brookline. 26 Davis Av.
- 1887 Francis, George Hills.....Brookline. 295 Walnut St.
- 1911 Frank, Morris.....Roxbury (Boston).
106 Humboldt Av.
- 1917 Frankel, David Israel.....Boston. Mass. Hom. Hosp.
- 1902 Franz, Adolph.....Holyoke. 266 Maple St.
- 1911 Fraser, Archibald McKay....Newbury St.
- 1880 Fraser, John Chisholm....East Weymouth.
(Weymouth).
- 1915 Fraser, Somers.....Boston.
514 Commonwealth Av.
- 1913 Fraser, William Leslie....Lynn. 812 Summer St.
- 1915 Frasier, Joseph Anthony....New Bedford. 295 Main St.
- 1911 Frasley, William Thomas....Pittsfield. 184 North St.
- 1905 Freedman, Louis Mark....Brookline. Office, Boston.
419 Boylston St.
- 1894 Freeman, Franklin Willard..Lynnfield Center
(Lynnfield).
P. O. Wakefield, R. F. D.
- 1916 Fregau, Aime Napoleon....Fitchburg. 44 Prichard St.
- 1900 French, Charles Ephraim....Lowell. 9 Central St.
- 1887 French, Charles Lindol....Clinton. 271 High St.
- 1893 French, George Henry....Somerville. 335 Broadway.
- 1892 French, John Marshall....Milford. 2 South Main St.
- 1911 French, Ralph Winward....Fall River. 151 Rock St.
- 1914 Friedman, Benjamin....Boston. 35 Allen St.
- 1916 Friedman, Eli.....Boston. 86 Bay State Rd.
- 1901 Friedman, Leo Victor.....Newton Center. Office,
Boston. 425 Marlboro' St.
- 1910 Friedman, Nathan.....Boston.
103S Washington St.
- 1897 Frost, Edward Clayton....Campello (Brookton).
68 Chestnut St.
- 1906 Frothingham, Channing, Jr..Boston. 395 Marlboro' St.
- 1887 Frye, Edmund Bailey.....Boston. 21 Chestnut St.
- 1909 Fuller, Andrew Howard....Cushman (Amherst).
- 1903 Fuller, Charles Benjamin....Waltham. 826 Main St.
- 1890 Fuller, Daniel Hunt.....Philadelphia, Pa.
49th and Market Sts.
- 1907 Fuller, Ernest Page.....Lawrence. 301 Essex St.
- 1894 Fuller, Frederick Henry....Walpole.
- 1892 Fuller, James Robert....Andover. 68 Central St.
- 1915 Fuller, Solomon Carter....Westborough. State Hosp.
- 1898 Fullerton, Walter Wilson....Brookton. 106 Main St.
- 1911 Funnell, Wilfred Goldwin..Wollaston (Quincy).
Office, Boston.
156 Huntington Av.
- G**
- 1905 Gabler, George Lewis....Holyoke. 149 Chestnut St.
- 1917 Gaetani, Arthur Leonard....Dorchester
23 East St.
- 1905 Gafney, Harry Dabol....Ware. 45 Main St.
- 1906 Gage, Fred Leon.....Lowell. 9 Central St.
- 1886 Gage, Homer.....Worcester. 72 Pearl St.
- 1884 Gage, James Arthur.....Lowell. 64 Central St.
- 1907 Gahan, Patrick Francis....Medford. 19 Washington St.
- 1891 Gale, George Washington....East Saugus (Saugus).
1904 68 Lincoln Av.
- 1901 Gale, Harold Adams.....Winchester. Office, Boston.
111 Newbury St.
- 1906 Gallagher, John Henry Chicopee. 105 Center St.
Connaughton
- 1912 Gallagher, Nicholas Malden. 221 Highland Av.
Ambrose
- 1907 Gallagher, Thomas Morton..Newton. 34 Channing St.
- 1906 Galligan, Edward Joseph....Taunton.
10 North Pleasant St.
- 1882 Galligan, Eugene Thomas..Roxbury (Boston).
84 Warren St.
- 1888 Gallison, Ambrose John....Franklin. 259 Dean Av.
- 1910 Gallison, James Murry....Boston.
520 Commonwealth Av.
- 1893 Gallivan, William Joseph..South Boston (Boston).
743 Broadway.
- 1883 Galloupe, Charles William..Boston.
188 Commonwealth Av.
- 1904 Galvin, Augustus Hughes..Springfield. 4 Chestnut St.
- 1901 Galvin, William.....Blackinton
(Williamstown).
Boston. 274 Marlboro' St.
- 1887 Gannett, William Whitworth
- 1917 Garbelnick, David Abraham Haverhill. Observatory Av.
- 1903 Gardner, Archibald Robert..Lowell. 64 Central St.
- 1881 Gardner, Clarence Northampton. 78 Main St.
Rhodolphus 1916
- 1912 Gardner, Edwin Daniels....New Bedford.
7 North Orchard St.
- 1900 Gardner, Harrie Milton....Cambridge.
128 Magazine St.
- 1913 Garipay, Ellsworth Peter....Lynn. 147 Franklin St.
- 1917 Garrett, Frank Steele....Chelsea.
242 Washington Av.
- 1917 Garrick, Nathan Henry....Cambridge. 11 Story St.
- 1875 Garland, Albert Stone Gloucester. 18 Pleasant St.
1908
- 1916 Garland, Frederick Eugene Wellesley Hills
(Wellesley). Office,
Boston. 453 Beacon St.
- 1874 Garland, George Minot....Boston. 227 Newbury St.
- 1905 Garland, Roy.....Gloucester. 17 Pleasant St.
- 1895 Gates, Ernest A.....Springfield.
49 North Main St.
- 1899 Gavin, John Harrison....Roxbury (Boston).
19S Warren St.
- 1905 Gay, Clarence Bertram....Fitchburg. 62 Day St.
- 1903 Gay, Fritz Walter.....Malden. 105 Salem St.
- 1868 Gay, George Washington..Chestnut Hill (Newton).
Office, Boston.
665 Boylston St.
- 1917 Gay, William Madison....Sharon. Summit Av.
- 1914 Gaylor, James Frederick..Springfield. 789 State St.
- 1918 Génereux, Edmund Alfred..Worcester. 390 Main St.
- 1902 Génereux, Joseph Olivier..Webster. 18 Main St.
- 1916 Gennert, Jacob.....New Bedford.
1105 Acushnet Av.
- 1907 George, Ariel Wellington..Boston. 43 Bay State Rd.
- 1897 George, Arthur Phillips....Haverhill. 143 Main St.
- 1908 George, Frank William....Worcester. 6 High St.
- 1908 George, Leslie Handlin....Bradford (Haverhill).
70 Main St.
- 1911 Gerber, Isaac.....Providence, R. I.
347 Thayer St.
- 1901 Germain, Harry Homer....Boston. 43 Bay State Rd.
- 1882 Gerould, Joseph Bowditch..North Attleborough.
34 High St.
- 1896 } Gerstein, Maurice.....{ Roxbury (Boston).
1913 } 466 Warren St.
- 1915 Gervais, Harriet Marion....Brooklyn, N. Y.
191 Ryerson St.
- 1885 Getchell, Albert Colby....Worcester. 6 Linden St.
- 1912 Ghoreyeb, Albert Alphonso In France.
Wood
- 1883 Gibbs, Locero Jackson....Chicopee Falls (Chicopee).
1915 33 Broadway
- 1917 Gibby, Harold James....Worcester. 13 Elm St.
- 1907 Giblin, Francis Joseph....Dorchester (Boston).
33 Adams St.
- 1909 Giddings, Harold Glard...Allston (Boston).
Office, Boston.
520 Commonwealth Av.
- 1886 Gifford, John Henry.....Fall River. 320 Rock St.
- 1908 Giguere, Alfred Joseph....Lowell. 777 Merrimack St.
- 1887 Gilbert, John.....Fall River. 254 Locust St.
1913
- 1898 Gilbert, Louis Whitmore....Brookline. 1470 Beacon St.

- 1917 Guy, Walter Bryant.....Roxbury (Boston).
277 Warren St.
1914 Gwinnell, Alfred Weston...Brighton (Boston).
558 Washington St.
1914 Gwynne, Samuel Carlton...Worcester. 346 Grafton St.

H

- 1911 Hagerly, Joseph James....Norwood.
699 Washington St.
1911 Hagopian, Levon George....Lynn.
26 South Common St.
1885 Hahn, Albert Johann.....Pattenburg, N. J.
1911 Haigh, Gilbert William....Worcester. 297 Pleasant St.
1900 Haines, Ignatius.....Brookline. Office, Boston.
178 Devonshire St.
Room 615.
1914 Haley, William Thomas....Salem. Office, Boston.
156 Huntington Av.
1915 Hall, Charles Francis...Newburyport. 210 High St.
Adams
1911 Hall, Gardner Wells.....Boston. 475 Beacon St.
1877 Hall, Harry Porter.....Leominster. 70 West St.
1896 Hall, Herbert James.....Marblehead.
Devereux Mansion.
1903 Hall, John Baptiste, Jr....Roxbury (Boston).
60 Windsor St.
1902 Hall, Walter Davis.....Port Clyde, Me.
1885 Hall, William Dudley.....Boston. 416 Marlboro' St.
1897 Hallett, Edward Bangs....Gloucester. 63 Middle St.
1906 Halligan, Edward Maurice...Reading. 18 Salem St.
1910 Hallisey, Joseph Edward....Dorchester (Boston).
467 Columbia Road.
1881 Halloran, Michael Joseph...Worcester. 42 Green St.
1890 Halpin, Andrew James....Lowell. 22 Central St.
1906 Halsall, Mary Elizabeth....Winthrop. 587 Pleasant St.
1916 Halton, Edward Peter.....Springfield. 357 Main St.
1912 Hamblen, Howard.....Maynard. Walnut St.
1914 Hamblat, Mary Lucia.....Waltham, R. I.
1908 Hamilton, Albert John...Boston. 69 Newbury St.
Adams
1899 Hamilton, Annie Lee.....Boston. 141 Newbury St.
1912 Hamilton, Burton Everett...West Roxbury (Boston).
152 Park St.
1905 Hamilton, Robert DeLancey...Newburyport.
220 High St.
1906 Hammond, Charles.....Hanover. Washington St.
1893 Hammond, Philip.....Winchester. Office, Boston.
483 Beacon St.
1899 Hammond, William John...Dorchester (Boston).
405 Washington St.
1875 Hammond, William Penn...Charlestown (Boston).
47 Monument Sq.
1914 Hampson, Nishan M.....Rutland.
State Sanatorium.
1916 Hand, Edward Patrick...Holyoke. 115 Suffolk St.
1911 Handy, Harrie Delmar....Haverhill. 18 Parallel St.
1899 Handy, Harry Tucker.....Scituate Center.
1895 Hanley, Francis Joseph....Whitman. 21 Whitman Av.
1895 Hanley, John Joseph....Motherwell, Scotland.
1911 Southernft.
1914 Hanscom, Ridgely Fernald...Newton Center (Newton).
59 Dalton Road.
1901 Hanson, Justus Greeley....Northampton. 219 Elm St.
1905 Hanson, William Clinton...Belmont.
395 Belmont St.
1917 Hanson, William Greene...Everett. 27 Norwood St.
1907 Hanson, William Thomas...Tewksbury.
State Infirmary.
1901 Hapgood, Lyman Sawin...Cambridge. 6 Garden St.
1890 Harding, George Franklin...Boston. 419 Boylston St.
1912 Hardwick, Everett Vinton...Dorchester (Boston).
43 Algonquin St.
1906 Hardwick, Sydney Curtis...Quincy. 159 Elm St.
1888 Hare, Charles Henry.....Boston. 483 Beacon St.
1901 Harkins, John Francis....Worcester. 18 Franklin St.
1915 Harkins, William Joseph, Jr...Quincy. 108 Goff St.
1890 Harlow, Corydon Webster...Melrose Highlands (Melrose). 300 Franklin St.
1908 Harmer, Torr Wagner....Boston.
496 Commonwealth Av.

- 1901 Harriman, Charles Henry...Whitinsville (North-bridge). Church St.
1903 Harriman, Cora Elizabeth...Framingham. 15 High St.
1902 Harriman, David Eugene...Springfield. 21 Besse Pl.
1903 Harriman, Perley.....Lynn. 290 Summer St.
1907 Harrington, Clifton Ward...Everett. 545 Broadway.
1912 Harrington, Daniel James...Dorchester (Boston).
975 Dorchester Av.
1884 Harrington, Harriet Louise...Dorchester (Boston).
20 Monadnock St.
1903 Harrington, Michael...Indian Orchard (Springfield). Oak St.
William
1889 Harrington, Thomas...Boston.
Francis
1895 Harris, Arthur Eugene....Lynn. 17 Chestnut St.
1898 Harris, Charles Edward...Hyannis (Barnstable).
Main St.
1915 Harris, Lorne Wilborne...Cliftondale (Saugus).
257 Lincoln Av.
1900 Harris, William DeBlois...Lynn. 98 South Common St.
1908 Harrison, Columbus...Boston. 35 Common St.
William
1906 Harrison, Henry.....Boston. 153 Huntington Av.
1884 Harrower, David.....Worcester. 13 Elm St.
1918 Hart, Francis Denbroeder...Worcester. 63 Pleasant St.
1896 Hart, George Fred.....Webster. 17 Church St.
1900 Hart, Henry Brown.....Yarmouthport
(Yarmouth).
1901 Hart, Joseph Storer.....South Lincoln (Lincoln).
1906 Hartman, Gustave.....Lynn.
177 North Common St.
1906 Hartnett, Edward Daniel...East Boston (Boston).
256 Bennington St.
1917 Hartnett, Edward Henry...Dorchester (Boston).
Lewis
1911 Hartnett, John Henry.....Worcester. 9 Elm St.
1898 Hartung, Harry Hall....Boston. 224 Huntington Av.
1901 Hartwell, Arthur Spear...Norwood. 90 Winter St.
1902 Hartwell, Harry Fairbanks...Brookline. 29 Edgell Rd.
1905 Hartwell, John Bryant....Colorado Springs, Colo.
1121 North Tejon St.
1901 Hartwell, William Winn...Malden. 61 Washington St.
1898 Harvey, William Wirt....Boston. 114 Fenway.
1893 Haskell, Henry Hill....Auburndale (Newton).
Office, Boston.
29 Commonwealth Av.
1891 Haskell, Nelson Cary....Amherst. 50 Main St.
1914 Haskins, Frank Eugene....Boston. 204 Huntington Av.
1881 Haskins, Solomon Foot....Cotuit (Barnstable).
Ocean View Av.
1913 Haslam, Frank Alden....Allston (Boston).
1379 Commonwealth Av.
1911 Hassett, Leonard Watson...Lynn. 586 Western Av.
1916 Hassman, David Morris...Brookline. 59 Longwood Av.
1882 Hastings, Judson...1918 Feeding Hills (Agawam).
Worthington
1894 Hastings, Robert...Brookline. 45 Kilsyth Rd.
Worthington
1907 Hatch, Ralph Augustus...Brookline. Office, Boston.
300 Commonwealth Av.
1887 Hatcher, William Josephus...Somerville. 28 Arlington St.
1899 Hathaway, John Gael....New Bedford.
388 County St.
1904 Haviland, Walter Childs...Worcester. 11 Elm St.
1900 Hawes, Alfred Taylor....Lynn. 85 North Common St.
1887 Hawes, Edward Everett...Barnstable. Office, Hyannis.
Railroad Av.
1903 Hawes, John Bromham, 2nd...Boston. 29 Gloucester St.
1908 Hawkins, Henry.....Dorchester (Boston). Office.
Boston. 391 Marlboro St.
1918 Hayden, John Joseph....Worcester. 358 Grafton St.
1898 Hayes, Albert Edwin....Providence, R. I.
12 Broad St.
1867 Hayes, Charles Cogswell...Farihaunt, Minn.
1890 +1890 Brunswick Hotel.
1899 Hayes, Frederick Legro...Brookline. 12 Verndale St.
1905 Hayes, Justin Edward....Northampton. 277 Main St.
1886
1893 Hayes, Justin Gideon....Williamsburg. Main St.

- 1870 Hayes, Stephen William...New Bedford.
61 Orchard St.
- 1914 Hayes, William Francis...Beverly. 377 Cabot St.
- 1917 Haywood, Ralph Winslow...Salem. 51 Columbus Av.
- 1899 Hazleton, Isaac Hills...Wellesley Hills
†1906 (Wellesley).
- 1900 Heald, Charles Gerry.....Pepperell. Main St.
- 1901 Healy, Daniel Laurence.....Framingham.
- 1899 Healy, Thomas Raymond...Newburyport.
54 Concord St.
- 1917 Healy, WilliamBoston. 40 Court St.
12 Charter St.
- 1915 Hearn, Walter Lawrence.....Lynn. 293 Euclid Av.
- 1883 Heath, Joseph Webster....Wakefield. 8 Avon St.
- 1900 Heaton, Thomas Henry....Cambridge. 315 Broadway.
- 1874 } Hebbard, Ellery Cola.....Boston. 122 Huntington Av.
- 1894 } West Pownal, Me. Maine
School for Feeble-Minded.
- 1906 Heffernan, David Aloysius..Allston (Boston).
69 Newbury St.
- 1911 Hegerty, Joseph Gordon....Boston.
514 Commonwealth Av.
- 1917 Heininger, Arthur Gustav..Gardner. 66 Parker St.
- 1912 Hemeon, Frederick.....Dorchester (Boston).
Chipman 9 Standish St.
- 1907 Henderson, Charles Russell..Reading. 74 Woburn St.
- 1911 Henderson, Francis.....Boston. 39 Newbury St.
Freeman
- 1902 Henderson, George Dallas..Holyoke. 276 Maple St.
- 1910 Hennelly, Thomas Patrick..Pittsfield. 184 North St.
- 1912 Hennessey, Thomas Francis..Lynn. 22 Mall St.
- 1909 Hennessey, William.....Salem. 333 Essex St.
Warren
- 1885 Henry, John Goodrich.....Winchendon.
15 Pleasant St.
- 1910 Hepburn, James Joseph....Boston. 56 Bay State Road.
- 1917 Herbert, EdwardFall River. 140 Purchase St.
- 1918 Herman, Edwards Wood...Boston. 483 Beacon St.
bridge
- 1911 Hermann, Otto John.....Roxbury (Boston). Office,
Boston.
522 Commonwealth Av.
- 1885 Herrick, Joseph Thomas....Springfield. 684 State St.
- 1915 Hersam, Norman Paul.....Stoneham. 20 Hersam St.
- 1880 Hersey, Freeman Clarke...Boston. 499 Beacon St.
†1914
- 1911 Hersey, Harold Waters....Winchester. Office,
Boston. Mass. Gen. Hosp.
- 1896 Hewes, Henry Fox.....Boston. 416 Marlboro' St.
- 1882 Hewins, Parke Woodbury...Wellesley Hills. Office,
Boston. 20 Beacon St.
- 1897 Hewitt, Clarence Elbert....Springfield. 796 State St.
- 1902 Hewitt, William Oakes....Attleborough.
34 Sanford St.
- 1911 Heydemann, Martin.....Brookline. Office. Boston.
510 Commonwealth Av.
- 1903 Hickey, John Joseph.....Peabody. 40 Main St.
- 1906 Hicks, George Henry.....Fall River
1973 South Main St.
- 1908 Higginbotham, Fred.....Watertown.
Augustus 98 Mt. Auburn St.
- 1893 Higgins, Frank Albert....Boston.
384 Commonwealth Av.
- 1914 Higgins, George Vincent...Randolph. Warren St.
- 1894 Higgins, James Haydyn...Marlston's Mills
(Barnstable).
- 1868 Hildreth, John Lewis †1909..Winchester. 55 Fletcher St.
- 1878 Hill, Edgar Dwight.....Plymouth. 27 Court St.
- 1917 Hill, Ernest Linwood.....Mills. Plain St.
- 1896 Hill, George Hillard.....Worcester. 15 High St.
- 1904 Hill, George Jackson.....Beverly. 548 Cabot St.
- 1901 Hill, George Sumner.....Boston. 295 Beacon St.
- 1886 Hill, Ira Clark.....Springfield. 137½ State St.
- 1913 Hill, Lawrence Richardson..Concord, N. H.
48 Pleasant St.
- 1914 Hill, Lewis Webb.....Boston.
99 Commonwealth Av.
- 1901 Hill, T. (Thomas) Chittenden Boston.
384 Commonwealth Av.
- 1903 Hillard, James Pearce....Springfield. 354 Walnut St.
- 1916 Hillard, William David...Northampton. 14 Center St.
- 1901 Hills, Charles Everett....South Natick (Natick).
- 1874 Hills, William Barker...Brookline. Office. Boston.
†1915 19 Pearl St.
- 1914 Hilton, John Joseph.....Lawrence. 336 Haverhill St.
Herron
- 1915 Hiltbold, Werner.....Easthampton. 1 Clark St.
- 1905 Hinchliffe, Frederick.....Cohasset. Main St.
- 1905 Hinchey, Richard.....Waltham. 17 Pine St.
- 1899 Hinchley, James William..Brookline. Office. Boston.
419 Boylston St.
- 1911 Hinds, Robert Watson....Buffalo, N. Y.
492 Elmwood Av.
- 1913 Hinton, William Augustus..Canton. Dedham St.
- 1889 Hipkiss, George.....Noroton Heights, Conn.
Soldiers' Home.
- 1909 Hirsch, Henry Leon.....Springfield. 172 Main St.
- 1882 } Hitchcock, Edward.....Boston. 32 State House.
- 1911 } 1911
- 1890 Hitchcock, Henry Russell..Plymouth. 36 Main St.
- 1895 Hitchcock, John Sawyer...Northampton. 160 Main St.
- 1909 Hixon, Edwin Colfax.....Brookline. Office. Boston.
419 Boylston St.
- 1913 Hoberman, Samuel.....Malden. 217 Bryant St.
- 1907 Hoch, Theodore Augustus..Waverley (Belmont).
McLean Hospital.
- 1882 Hodgdon, Andrew Hall....Dedham. 110 Maple Pl.
- 1917 Hodgdon, Frank Welling..Boston. City Hospital.
ton, Jr.
- 1903 Hodgdon, Ralph Franklin..Somerville.
16 Westwood Road
- 1894 Hodges, Almon Danforth...Roxbury (Boston).
The Warren
- 1916 Hodgkins, Edward Marshall Boston. 24 McLean St.
- 1902 Hodskins, Morgan.....Palmer.
Brewster Monson State Hospital.
- 1885 Hogan, Joseph Ambrose....Lawrence. 537 Essex St.
- 1893 Hogner, Richard Per...Boston. 365 Mass. Av.
Gustaf
- 1907 Hoit, Henry Ambrose.....Pasadena, Calif.
1110 No. Michigan Av.
- 1906 Hoitt, Charles Lewis.....Lynn. 88 Franklin St.
- 1883 Holbt, Eugene Gorham.....Belmont. 87 Payson Road.
- 1902 Holbrook, Bradbury.....Waltham. 802 Main St.
- 1910 Holbrook, Charles Albert...Haverhill. 388 Main St.
- 1882 Holden, Charles Sumner...Attleborough.
24 South Main St.
- 1889 Holden, Eugene Martin....New York, N. Y.
1 Madison Av.
- 1883 Holden, William Daniel...Haverhill. 74 Emerson St.
- 1897 Holland, Hubert Thomas...Jamaica Plain (Boston).
423 Center St.
- 1908 Hollings, Byam.....Boston. Mass. Gen. Hosp.
- 1903 Holmberg, Carl Lester.....Campello (Brockton).
Magnus 1106 Main St.
- 1909 Holmes, Arthur Brewster...Kingston. Main St.
- 1913 Holmes, Daniel Henry.....Middleborough.
15 School St.
- 1906 Holmes, George Winslow...Newton. Office. Boston.
Mass. Gen. Hospital.
- 1900 Holmes, Harry Bigelow....Adams. 37 Park St.
- 1902 Holmes, Howard Fowler...Georgetown. 18 Pond St.
- 1910 Holmes, John Franklin....Manchester, N. H.
951 Elm St.
- 1895 Holmes, May Salona.....Worcester.
Belmont Hospital.
- 1907 Holt, Charles Herbert....Pawtucket, R. I.
Masonic Bldg.
- 1883 Holyoke, Frank.....Holyoke. 441 High St.
- 1914 Holzer, William Francis...Winchendon. 35 School St.
- 1916 Holzman, Joseph.....Roxbury (Boston).
1 Elm Hill Av.
- 1904 Homans, John.....Brookline.
559 Chestnut Hill Av.
- 1911 Honeli, James Albert.....New Haven, Conn.
320 Cedar St.

- 1897 Hood, Mary Gould Brookline. 73 Longwood Av.
 1900 Hopkins, Bertrand Hiram. Ayer. Washington St.
 1895 Hopkins, Frederick Eugene. Springfield. 25 Harrison Av.
 1912 Hopkins, John Wilson. Washington, D. C.
 Washington Sanatorium.
 1917 Hopkins, Ralph Harrison. Marion. 4 Cottage St.
 1911 Hopkins, William Thorpe. Lynn. 7 Atlantic St.
 1906 Hopkinson, George. Cambridge.
 Office, Boston.
 419 Boylston St.
 1906 Horne, Lester Wallace. Fairhaven. 32 Union St.
 1914 Hornor, Albert Aurelius. Boston. 86 Bay State Rd.
 1915 Horrax, Gilbert. Roxbury (Boston).
 P. B. Brigham Hospital.
 1914 Horsman, Hiram Lionel. Worcester.
 Grafton State Hosp.
 1906 Hosley, Walter Alexis. Springfield.
 145 Clarendon St.
 1885 Hough, Garry de Neville. New Bedford.
 542 County St.
 1914 Houghton, Nidhard Boston. 220 Clarendon St.
 Hahnemann
 1906 Houghton, Richard Henry. East Boston (Boston).
 308 Sumner St.
 1882 Houston, John Alexander. Northampton.
 State Hospital.
 1908 Howard, Alonzo Gale. Boston. 636 Beacon St.
 1882 Howard, Amasa. Chelmsford.
 1911 Howard, Arthur Allison. Brookline. Office, Boston.
 520 Commonwealth Av.
 1917 Howard, Charles Tilden. Boston.
 510 Commonwealth Av.
 1898 Howard, Eugene Henry. Pittsfield. 246 North St.
 1901 Howard, Frederic Hollis. Williamstown.
 50 Spring St.
 1917 Howard, Harvey James. Boston. 233 Charles St.
 1885 Howard, Herbert Burr. Roxbury (Boston). Peter
 Bent Brigham Hospital.
 1916 Howard, Herbert Handy. Boston. 24 Marlboro' St.
 1899 Howard, Joseph Francis. Lawrence. 6 Avon St.
 1885 Howard, Margaret Emily. Roxbury (Boston). Peter
 B. Brigham Hospital.
 1904 Howe, Harry Newell. Greenfield. 4 Bank Row.
 1890 Howe, Joseph Dimock. Pittsfield. 7 North St.
 1876 Howe, Octavius Thorndike. Boston. 154 Beacon St.
 1885 Howe, Oliver Hunt. Cohasset. Main St.
 1898 Howe, Walter Clarke. Boston. 303 Beacon St.
 1917 Howe, Winfred Lewis. Everett. 357 Broadway.
 1900 Howell, William Westcott. West Roxbury. Office, Boston.
 279 Clarendon St.
 1912 Howes, Frank Miller. New Bedford.
 9 North Orchard St.
 1917 Howes, Willard Boyden. Rutland State Sanatorium.
 1909 Howland, Charles Abel. Washington, D. C.
 1302 R. St. N. W.
 1908 Howland, George Lewis. Jamaica Plain (Boston).
 6 Beaufort Road.
 1897 Howland, Joseph Briggs. Boston. Mass. Gen. Hosp.
 1915 Hoyt, Edward Malcolm. Georgetown. 38 Main St.
 1911 Hoyt, Perley Adelbert. Ludlow. North St.
 1890 Hoyt, Walter Scott. Waltham. 104 Crescent St.
 1909 Hubbard, Edward Dana. Gloucester. 96 Middle St.
 1883 Hubbard, Frank Allen. Taunton. 157 High St.
 1901 Hubbard, George William. Springfield. 327 State St.
 1896 Hubbard, Joshua Clapp. Boston. 86 Bay State Rd.
 1881 Hubbard, Josiah Clark. Holyoke. 243 Maple St.
 1894 Hubbard, Osmon Huntley. Gilesum, N. H.
 1907 Hubbell, Adelbert Merton. Haverhill.
 22 Merrimack St.
 1895 Hudnut, Frank Parker. New Bedford.
 1914 Hudnut, Paul Albert. Northampton.
 156 William St.
 45 New South St.
 1916 Hughes, Edgar Hamill. Northampton. 277 Main St.
 1917 Hughes, George Frederick. Somerville. 143 Cross St.
 1918 Hughes, John. Holyoke. 240 Maple St.
 1896 Hughes, Laura Ann Boston.
 Cleophas
 93 Huntington Av.
 1916 Hunt, Albert Foster. Bridgewater. 28 School St.
 1905 Hunt, Alice Elizabeth Holyoke. 364 Maple St.
 Palmer
 1897 Hunt, Daniel Lawrence. Boston.
 293 Commonwealth Av.
 1903 Hunt, Ernest Lerol. Worcester. 771 Main St.
 1918 Hunt, Frank Hamilton. Mattapan (Boston).
 249 River St.
 1902 Hunt, George Eddy. Holyoke. 364 Maple St.
 1902 Hunt, George Pratt. Roxbury (Boston).
 55 Van Dyke St.
 1911 Hunt, Harold Otis. Newtonville (Newton).
 424 Newtonville Av.
 1915 Hunt, William Elliot. Bridgewater. 120 Main St.
 1878 Hunt, William Otis. Newtonville (Newton).
 424 Newtonville Av.
 1904 Hunt, Wilson Eugene. Malden. 332 Pleasant St.
 1905 Hunter, Norman McLeod. Hudson. 20 Lincoln St.
 1888 Hunting, Nathaniel Stevens. Quincy. 1136 Hancock St.
 1908 Huntington, James Lincoln. Boston. 311 Marlboro' St.
 1876 Huntress, Leonard. 1914 Lowell. 46 Fort Hill Av.
 1900 Hurd, Albert Gordon. Millbury.
 1899 Hurd, Randolph Campbell. Newburyport. 244 High St.
 1888 Hurley, Daniel Bartholo. East Boston (Boston).
 mew
 42 Chelsea St.
 1914 Hurley, Daniel Joseph. Charlestown (Boston).
 24 Monument Av.
 1906 Hurley, Edward Daniel. South Boston (Boston).
 Office, Boston.
 419 Boylston St.
 1903 Hurley, John Joseph. Boston.
 541 Commonwealth Av.
 1913 Hurley, Patrick Eugene. Holyoke. 109 Suffolk St.
 1918 Hurley, William Cyril. Quincy. Fore River Works.
 Rowe
 1903 Hurwitz, Abraham Joseph. Brookline. Office, Boston.
 107 Green St.
 1905 Hussey, Edward John. Holyoke. 276 High St.
 1891 Hutchings, Joseph Henry. Woburn. 514 Main St.
 1909 Hutchins, Henry Talbot. Boston.
 522 Commonwealth Av.
 1895 Hutchinson, Charles Martin. Cambridge. 5 Garden St.
 1895 Hutchinson, Chessman. Auburndale (Newton).
 Palmer
 88 Central St.
 1901 Hutchinson, Walter Abington.
 Perkins
 1916 Hyde, Harold Valmore. 496 Commonwealth Av.
 1917 Hyman, Clarence Henry. Boston. City Hospital.
 I
 1892 Ilesy, Frederick Roscoe. Medford.
 69 Washington St.
 1909 Inglis, Harry James. Brookline. Office, Boston.
 483 Beacon St.
 1917 Ingoldsby, Joseph Dorchester (Boston).
 Emmanuel
 549 Blue Hill Av.
 1887 Ingraham, Lena Vaughn Brookline. 38 Webster St.
 1917 Ireson, Franklin Reynolds. Marblehead.
 216 Pleasant St.
 1912 Irving, Frederick Boston. 86 Bay State Rd.
 Carpenter
 1917 Irving, Harry Washington. Boston. 194 Huntington Av.
 1897 Irwin, Vincent Joseph. Springfield. 351 Main St.
 J
 1887 Jack, Edwin Everett. Boston. 215 Beacon St.
 1886 Jack, Ernest Sanford. Melrose.
 56 West Emerson St.
 1883 Jack, Frederick Lafayette. Boston. 215 Beacon St.
 1901 Jack, Lewis Harlow. West Newton (Newton).
 68 Chestnut St.
 1899 Jackson, Alexander Southborough. Main St.
 Washington
 1897 Jackson, Alton Atwell. Everett. 512 Broadway.
 1892 Jackson, Charles William. Monson. Main St.
 1911 Jackson, Delbert Linscott. Boston.
 362 Commonwealth Av.
 1885 Jackson, Fred William. Jefferson, Me.
 1884 Jackson, Henry. Boston. 380 Marlboro' St.

1897 Jackson, Oliver Howard....Fall River.
 34 North Main St.
 1892 Jackson, Ralph Wentworth..Fall River. 257 Cherry St.
 1915 Jackson, Roy Chase.....Harrisburg, Pa.
 State Hospital.
 1880 Jackson, William Benjamin..Lowell. 229 Stevens St.
 1915 Jacoby, Rudolph.....Weymouth.
 24 Commercial St.
 1911 Jacques, Hector.....Fitchburg. 145 Water St.
 1913 Jakmauh, Paul John.....South Boston (Boston).
 509 Broadway.
 1906 James, Arthur Percy.....Boston. 27 Hancock St.
 1905 James, Benjamin
 Northampton.
 Franklin, Jr. 100 Main St.
 1898 James, George Herbert.....Westfield. 5 Court St.
 1918 Janjigian, Robert Rupen....Bangor, Me. State Hospital.
 1913 Jantzen, Francis Thomas....Brookline. Office, Boston.
 514 Commonwealth Av.
 1880 Jaques, Henry Percy.....Lenox. "Home Farm."
 1884 Jarvis, William Furness...Waltham.
 326 Lexington St.
 1890 Jelly, Arthur Carlton.....Boston. 10 Arlington St.
 1883 Jenkins, Charles Edwin....Lynn. 10 Ireson St.
 1905 Jennings, Curtis Herman....Fitchburg 201 Mechanic St.
 1912 Jessaman, Leon Webster....Framingham. 30 Hollis St.
 1915 Jewett, Everett Porter.....Gardner. 8 Vernon St.
 1917 Jewett, Howard Wakefield Lowd. 9 Central St.
 1887 Jillson, Franklin Campbell..West Roxbury (Boston).
 11 Hastings St.
 1913 Johnson, Alfred Emil, Jr....Greenfield. 39 Main St.
 1915 Johnson, Charles Frederic..Newburyport.
 45 Washington St.
 1901 Johnson, David Joseph.....Roxbury (Boston).
 1 Schuyler St.
 1907 Johnson, Erik St. John....New Bedford.
 271 Union St.
 1884 Johnson, Francis Emerson..Erving.
 1883 Johnson, Frank Mackie....Los Angeles, Calif.
 Marquette Apartments.
 1880 Johnson, Frederick William..Boston. 167 Newbury St.
 1913 Johnson, Harold Abbott....Lynn. 70 Broad St.
 1915 Johnson, Herbert Lester....Roxbury. Office, Boston.
 510 Commonwealth Av.
 1914 Johnson, Herbert Lewis....Hadley. Main St.
 1908 Johnson, John Birger
 Lowell.
 1894 Johnson, Mary Williamina Chestnut Hill (Brookline).
 Lougee 158 Wolcott Road.
 1894 Johnson, Orville Edson....Winthrop.
 123 Winthrop St.
 1903 Johnson, Peer Prescott....Beverly. 15 Washington St.
 1914 Johnson, Sarah Coppinger Franconia, N. H.
 1901 Johnson, Walter Sydney....Los Angeles, Cal.
 1767 North Adams St.
 1883 Johnson, William Augustus..Lowell. 145 Merrimack St.
 1878 Johnson, William Louis....Uxbridge. Main St.
 1908 Johnson, William.....Dorchester (Boston).
 210 Norfolk St.
 1902 } Johnstone, William Joseph { Jamaica Plain. Office,
 1917 } Boston.
 1890 Jones, Charles David.....Malden. Office, Boston.
 137 Newbury St.
 1897 Jones, Daniel Fiske.....Boston. 195 Beacon St.
 1891 Jones, Elgin Wilbur.....Lynn. 44 Atlantic St.
 1907 Jones, Everett.....Brookline. Office, Boston.
 496 Commonwealth Av.
 1918 Jones, Fred Durgin.....Springfield. 10 Chestnut St.
 1897 Jones, Frederick Ellis....Quincy. 1150 Hancock St.
 1905 Jones, Frederick Elmer....Brookline. 48 Corey Rd.
 1887 Jones, Gilbert Norris.....Wellesley Hills
 (Wellesley).
 1897 Jones, John Clarke.....Brookline. 56 Hawes St.
 1892 Jones, Lombard Carter.....Wauquoit (Falmouth).
 80 Humphrey St.
 1892 Jones, Lyman Asa.....Swampscott.
 1898 Jones, Mary Scott.....Boston. 82 St. Stephen St.
 1903 Jones, Raymond Child.....Fitchburg.
 4 Ashburnham St.
 1911 Jones, Robert Le Roy.....Lowell. 219 Central St.

1905 Jones, Wellington West....Housatonic (Great Bar-
 rington). 41 Main St.
 1893 Jones, William Marks.....Lowell. 145 Merrimack St.
 1859 Jordan, Charles †1895 Wakefield. 9 Jordan Av.
 1911 Jordan, Ernest Major.....Boston.
 496 Commonwealth Av.
 1873 Jordan, George Albert Worcester. 46 Myrtle St.
 †1913
 1905 Jordan, John Franklin....Peabody. 76 Lynn St.
 1894 Joslin, Elliott Proctor.....Boston. 81 Bay State Rd.
 1911 Joslyn, Arthur Everett....Lynn. 211 Western Av.
 1901 Jouett, Fred Robert.....Cambridge. 3 Garden St.
 1906 } Joyce, Thomas Francis....Lawrence. 121 Marston St.
 1912 }
 1914 Judd, Ernest Hart.....Springfield. 685 State St.
 1912 Judkins, Charles Louville Lynn. Office, Boston.
 Mason 149 Newbury St.
 1891 Judkins, Frank Louville....Lynn. 7 Mason St.
 1915 Jurist, Charles.....Springfield. 1141 North St.

K

1890 Kaan, George Warton.....Brookline. Office, Boston.
 419 Boylston St.
 1917 Kable, Josephine Downie..Wrentham.
 Sch. Feeble-Minded.
 1916 Kandib, Anna Hilda.....Brockton.
 Brockton Hospital.
 1917 Kane, William Vincent....Lynn. 11 Bay View Av.
 1914 Kaplovitch, Henry.....Lawrence.
 Office, Haverhill.
 50 Merrimack St.
 1904 Katsainos, George Michel..Boston. 106 Huntington Av.
 1889 Kean, Michael Edward....Manchester, N. H.
 780 Elm St.
 1903 Keane, Henry Joseph.....Everett. 385 Broadway.
 1901 Kearney, John Henry.....Fitchburg. 80 Wallace St.
 1909 Kearney, Joseph Patrick...Lowell.
 10 East Merrimack St.
 1886 Keefe, Daniel Edward....Springfield. 127 Main St.
 1889 } Keefe, Patrick Henry... { Providence, R. I.
 1902 } 257 Benefit St.
 1889 Keegan, Charles Andrew....Arlington. 734 Mass. Av.
 1906 } Keeler, William Bash... { Roxbury (Boston).
 1911 } 470 Warren St.
 1902 }
 1914 } Keenan, George Francis..Boston. 520 Beacon St.
 1897 Keenan, Herbert John....South Boston (Boston).
 254 Broadway.
 1916 Keenan, James Alphonsus..Boston. 745 Mass. Av.
 1910 Keever, Henry Floyd.....Auburndale (Newton).
 69 Maple St.
 1904 Keith, Halbert Lynn.....Milford. 255 Main St.
 1884 Keith, Wallace Cushing....Brockton.
 237 North Main St.
 1892 Keleher, William Henry...Woburn. 48 Pleasant St.
 1910 Keleher, Jeremiah Edward..Haverhill. 85 Emerson St.
 1896 Keleher, Patrick Francis..Cambridge. 1713 Mass. Av.
 1912 Kelley, Clarence Moore....Waverley (Belmont).
 McLean Hospital.
 1917 Kelley, Eugene Robert....Brookline. 41 Egremont Rd.
 1916 Kelley, Henry Joseph....Dorchester (Boston).
 109 Stoughton St.
 1903 Kelley, Joseph Henry Ossining, N. Y. 7 Ellis Pl.
 1914 Kelley, Lawrence Kendall..Peabody.
 39 Washington St.
 1914 Kelley, Robert Edward Mattapan (Boston).
 Stack 249 River St.
 1883 Kellogg, Edward Brinley...Boston. Office,
 178 Devonshire St.
 1912 Kellogg, Foster Standish...Boston. 96 Bay State Rd.
 1892 } Kellogg, Frederic Leroy { Boston.
 1899 } 366 Commonwealth Av.
 1908 Kelly, John Michael.....Dorchester (Boston).
 182 Bowdoin St.
 1893 Kelly, William P.....Pittsfield. 61 Union St.
 1913 Kemp, Howard Martin....Greenfield. 6 Franklin St.

- 1915 Kemp, Lysander Schaffer...Canton. Mass. Hosp. Sch.
 1895 } Kennard, Harry Delano...Peabody. 84 Main St.
 1902 }
 1877 Kennealy, John Henry.....Brookline. Office, Roxbury
 (Boston). 1570 Tremont St.
 1898 Kennedy, Alexander.....Boston. 1075 Boylston St.
 Gladstone
 1905 Kennedy, Edward Anthony...Great Barrington.
 314 Main St.
 1901 Kennelly, Julia Grice.....Cambridge. Kennedy Rd.
 1913 Kenney, Clarence Bronson...Winchendon. 22 Walnut St.
 1909 Kenney, Thomas Francis.....Worcester. 9 High St.
 1905 Kenney, Walter Clement.....Winchendon. 22 Walnut St.
 1909 Kennison, Frederick.....Newton, N. H. Main St.
 Marshman
 1907 Kent, Bradford.....Dorchester (Boston).
 798 Blue Hill Av.
 1905 Kent, Ralph Porter.....Attleborough.
 27 South Main St.
 1914 Kenworthy, Marion.....Foxborough. State Hosp.
 Edwena
 1918 Keown, James Archibald.....Lynn. 42 High St.
 1900 Kepler, Charles Ober.....Boston.
 362 Commonwealth Av.
 1904 Kerr, Isabella Dickieson.....Boston. 481 Beacon St.
 1915 Kerrigan, John Joseph.....Fall River.
 1427 North Main St.
 1911 Kerrigan, Joseph Henry.....Stoneham. 66 Central St.
 1916 Kewer, Leo Thomas.....Waverley (Belmont).
 16 Hawthorn St.
 1917 Khouy, Kamel.....Boston. 79 Tyler St.
 1909 Kickham, Charles Joseph.....Brookline. Office, Boston.
 536 Commonwealth Av.
 1908 Kilbourn, Arthur Goss.....Groton. Main St.
 1884 Kilburn, Henry Whitman.....Boston.
 1913 Kilburn, Ira Nelson.....Holyoke. 180 Chestnut St.
 1877 Kilby, Henry Sherman.....North Attleborough.
 98 Church St.
 1914 Killam, Franklin.....West Medford (Medford).
 Harrison 3 Brook St.
 1914 Killelea, Edward Vincent.....Fitchburg. 5 Day St.
 1890 Kilroy, Philip.....Springfield. 61 Chestnut St.
 1905 Kilmington, Arthur Ronald.....Boston. 66 Bay State Rd.
 1909 King, Frederick Augustine...Marshfield. Main St.
 1910 King, George Clifford.....Fall River. 57 Rock St.
 1914 King, George Elbert.....Wollaston (Quincy).
 71 Beach St.
 1898 King, Myron Louis.....Cambridge. 788 Mass. Ave.
 1888 King, Nathaniel Clark.....Campello (Brookton).
 1147 South Main St.
 1910 King, Nicholas James.....Roslindale (Boston).
 Quan 44 Ashland St.
 1904 Kinloch, Raymond.....Springfield. 83 Walnut St.
 Alexander
 1914 Kinne, George Lyman.....Holyoke. 285 Maple St.
 1900 Kinney, William D'Arcy.....Osterville (Barnstable).
 1908 Kinnicut, Roger.....Worcester. 56 Cedar St.
 1904 Kirby, Holder Cray.....New Bedford.
 33 South Sixth St.
 1907 Kirkpatrick, George.....Lynn. 192 South Common St.
 Holland
 1915 Kirkwood, Allan Stewart.....Newton Center (Newton).
 1301 Center St.
 1910 Kiskoos, Robert James.....Boston. 479 Beacon St.
 1898 Kite, Walter Chester.....Milton. 17 Russell St.
 1880 Kittredge, Joseph.....North Andover.
 56 Academy Rd.
 1874 Kittredge, Thomas.....Salem. 13 Chestnut St.
 1918 Klein, Armin.....Chelsea. 46 Tudor St.
 1914 Kline, George Milton.....Beverly. Office, Boston.
 No. 36 State House.
 1881 Knapp, Philip Coombs.....Boston. 535 Beacon St.
 1899 Knight, Charles Eugene.....Rockland. 29 Church St.
 1902 Knight, Charles Lewis.....West Roxbury (Boston).
 Office, Boston
 544 Columbus Av.
 1902 Knight, Charles Sumner...Westborough.
 54 West Main St.
 1896 Knight, Marcus Whitney...Milford. S West St.
 1889 Knowles, James Harris....Gloucester.
 2 1/2 Highland St.
 1884 Knowles, William Fletcher...West Newton. Office,
 Boston. 220 Clarendon St.
 1892 Knowlton, Charles Davison...Roxbury (Boston).
 571 Warren St.
 1910 Knowlton, Edward Allen...Holyoke. 227 Maple St.
 1903 Knowlton, Wallace Miles...Boston. 462 Boylston St.
 1901 Knowlton, William Thomas...Innabardston. Barre Rd.
 1911 Knudson, Mette Marie.....West Roxbury (Boston).
 78 Park St.
 1894 Koulikow, Moses Joseph....Roxbury (Boston).
 486 Warren St.
 1916 Konrad, Frank Charles.....Boston. 483 Beacon St.
 William
 1916 Koplin, Harry.....Springfield. 1293 North St.
 1901 Kurth, Gustave Emil.....Lawrence.
 86 East Haverhill St.
- L**
- 1917 Lacey, Walter Hamer.....Boston. Mass. Gen. Hosp.
 1909 Lachance, Alfred Philius...Gardner. 142 Parker St.
 1900 Ladd, Maynard.....Boston. 270 Clarendon St.
 1907 Ladd, William Edwards...Boston. 346 Beacon St.
 1906 Lacey, Francis Howard....Boston. 638 Beacon St.
 1899 Laighton, Florence Marion...New York, N. Y.
 33 West 96th St.
 1917 La Liberté, Elie Joseph...Fall River.
 1420 So. Main St.
 1902 } Lally, Francis Henry.....Milford. 5 Park Terr.
 1915 }
 1914 Lally, William James.....Pittsfield. 184 North St.
 1892 LaMarche, Walter Joseph...Cambridge. 1035 Mass. Av.
 1901 Lambert, Fred De Forest...Tyngsborough.
 1901 Lambert, John Henry.....Lowell. 202 Merrimack St.
 1912 LaMoire, Charles Ten.....Mansfield Depot, Conn.
 Eyck State Tr. School
 and Hospital.
 1894 Lamourenx, Joseph Elzear...Lowell. 710 Merrimack St.
 1892 Lancaster, Sherman Russell...Cambridge. 27 William St.
 1891 Lancaster, Walter.....Brookline. Office, Boston.
 Brackett 522 Commonwealth Av.
 1909 Lane, Clarence Guy.....Woburn. Office, Boston.
 520 Commonwealth Av.
 1914 Lane, Clayton Rogers.....Fitchburg.
 Burbank Hospital.
 1884 Lane, Edward Binney.....Jamaica Plain (Boston).
 Office, Boston.
 419 Boylston St.
 1916 Lane, Elwin Dexter.....Andover. 9 Locke St.
 1905 Lane, John William.....Dorchester (Boston).
 Office, Boston.
 520 Beacon St.
 1900 Lane, Walter Appleton....Milton. 173 School St.
 1904 Lang, Herbert Bowman....South Hadley.
 1896 Langlois, Joseph Augustus...Pittsfield. 54 Bradford St.
 1907 Lanpher, Howard Arthur...Chester.
 1915 LaViviere, Athanasie.....New Bedford.
 de Charette Evariste 1394 Acushnet Av.
 1918 La Rochelle, Arthur Henry...Springfield. 508 Main St.
 1913 La Rochelle, Fred Désiré...Springfield. 508 Main St.
 1915 Larrabee, Frank Walton....Brighton (Boston).
 645 Washington St.
 1905 Larrabee, Herbert Manson...Tewksbury. Main St.
 1897 Larrabee, Ralph Clinton...Boston. 912 Beacon St.
 1911 Laskey, Edward Philip.....Haverhill. 90 Emerson St.
 1899 Latham, Benoni Mowry....Mansfield.
 10 North Main St.
 1910 Laton, George Peavey....Salem Depot, N. H.
 Main St.
 1898 Lavaillé, George Omer....Lowell. 790 Merrimack St.
 1872 LaVigne, Alfred Willis...Lowell. 173 Merrimack St.
 1913
 1906 Law, Katharine Hayes....Erie, Pa. 247 West 8th St.
 1888 Lawler, William Patrick...Lowell. 53 Central St.
 1914 Lawley, Bruce Irving.....Arlington. 214 Mass. Av.
 1907 Lawlor, Edward Francis...Lawrence. 33 Tremont St.
 1916 Lawlor, James Francis....Beverly. 1 Knowlton St.
 1916 Lawlor, John Charles....South Boston (Boston).
 Carney Hospital

- 1916 Lovesey, Burton Edward..Lowell.
Lowell Gen. Hospital.
- 1884 Lovett, Robert Williamson..Boston. 234 Marlboro' St.
- 1903 Lowd, Harry Mosher.....Swampscott.
- 1886 Lowe, Fred Messenger.....West Newton (Newton).
1354 Washington St.
- 1901 Lowell, Albert Fay.....Gardner. 20 Vernon St.
- 1898 Lowell, Alverne Percy.....Fitchburg. 52 Hartwell St.
- 1901 Lowell, Freeman.....Boston. 2A Milford St.
- 1905 Lowell, William.....Lamprey
Holbrook, Winchester. Office, Boston
101 Newbury St.
- 1906 Lowney, Dennis Joseph....New Bedford.
1325 Acushnet Av.
- 1902 Lowney, John Francis....Fall River.
755 Plymouth Av.
- 1915 Lowrey, Lawson Gentry....Roxbury. 74 Fenwood Rd.
- 1918 Lowry, Franklin Patterson..Newton. 259 California St.
- 1910 Lucas, William Palmer....San Francisco, Calif.
University Hospital.
- 1908 Luce, Dean Sherwood.....Canton.
- 1913 Luce, LeRoy Alson.....Boston.
536 Commonwealth Av.
- 1898 Luchsinger, Harry Warner..Housatonic (Great Bar-
rington). Main St.
- 1913 Luftig, Jacob.....Roxbury (Boston).
502 Warren St.
- 1891 Lund, Fred Bates.....Boston. 527 Beacon St.
- 1908 Lundwall, Laurence.....Gardner. 316 Central St.
- 1908 Lupien, Henry John.....Brookton. 63 Main St.
- 1890 Lussier, Charles Arthur....Worcester. 154 Grand St.
- 1913 Lyle, Eveline Burton.....Brookline.
35 Winchester St.
- 1914 Lyman, Henry.....Boston.
36 Commonwealth Av.
- 1907 Lyman, William Robinson..Worthington.
- 1899 Lynch, Charles Francis....Springfield. 317 Main St.
- 1903 Lynch, Cornelius Joseph....Quincy. 1620 Hancock St.
- 1908 Lynch, Daniel Lawrence....Roslindale (Boston).
Office, Boston. 50 Oliver St.
- 1902 Lynch, Patrick Michael....Springfield. 39 Main St.
- 1911 Lynch, William Francis....Worcester. 390 Main St.
- 1914 Lyons, George Aloysius....Lynn.
120 South Common St.
- 1896 Lyons, Joseph Benedict....Charlestown (Boston).
1 Dexter Row.
- M**
- 1889 MacArthur, George Elden..Ipswich. 45 Central St.
- 1913 MacAusland, Andrew Roy..Boston. 240 Newbury St.
- 1905 MacAusland, William.....Boston. 240 Newbury St.
- 1913 Macauley, Joseph Arthur..Dorchester (Boston).
Russell
561 Dudley St.
- 1907 MacCallum, Wallace Peter..Boston.
214 Huntington Av.
- 1912 MacCorison, Carl.....North Reading. State
Sanatorium.
Copeland
P. O. North Wilmington.
- 1906 Macdonald, Alexander.....Dorchester (Boston).
Ambrose
119 Washington St.
- 1887 Macdonald, Colin William..Roxbury (Boston).
1 New Heath St.
- 1909 MacDonald, Donald.....Taunton. 10 White St.
- 1906 Macdonald, Frederick.....Roxbury (Boston).
Cornelius
622 Warren St.
- 1914 MacDonald, Frederick.....Waltham. Office, Boston.
Livingstone
196 Huntington Av.
- 1913 Macdonald, John Bernard..Methuene (Danvers).
State Hospital.
- 1905 Macdonald, William.....Malden. 590 Main St.
- 1865 Macdonald, William Lewis..Wellesley Hills
Campbell
1903
(Wellesley).
- 1915 Macdougall, Duncan.....Haverhill. 131 Main St.
- 1908 Mace, Charles Herbert....Huntington.
- 1913 MacFadyen, John.....Worcester. 118 Belmont St.
- Alexander
- 1916 MacGray, Charles Leverne..Needham.
1070 Great Plain Av.
- 1917 MacIntyre, William Angus..North Grafton (Grafton).
State Hospital.
- 1914 MacIver, George Albert....Boston. Mass. Gen. Hosp.
- 1901 MacKay, Edward Hart....Clinton. 92 Walnut St.
- 1898 MacKay, George Finlay....Dalton. 71 Main St.
- 1914 MacKay, William Henry....Worcester. City Hospital.
- 1879 MacKeen, Alfred Atwater..Wilmington. 29 Park Av.
- 1915 MacKenzie, Roland Chester..Waltham. 111 Main St.
- 1906 MacKerrow, Horace Gilford..Worcester. 96 Eastern Av.
- 1885 Mackie, Laura Viola.....Attleborough.
Gustin
157 Pleasant St.
- 1899 Mackie, William Charles....Brookline. 54 Coolidge St.
- 1905 MacKillop, Daniel.....Cambridge. 307 Broadway.
- 1907 MacKinnon, Donald.....Truro. N. S. Prince St.
- 1898 MacKnight, Adam.....Fall River.
Stephenson
355 North Main St.
- 1914 MacKnight, William Frank..Boston. 198 St. Botolph St.
- 1901 MacLennon, Angus Daniel..Boston. 654 Tremont St.
- 1913 } MacLeod, John Malcolm..Quincy. 28 Federal St.
- 1915 }
- 1908 MacLeod, Norman Murray..Newport, R. I.
6 Powell Av.
- 1911 MacMichael, Earle Haggett..Malden. 56 Summer St.
- 1890 MacMillan, Andrew Louis..Hanover. Washington St.
- 1910 MacMillan, Andrew.....Concord, N. H.
Louis, Jr.
29 South Main St.
- 1910 MacNeil, Charles Seward..Malden. 143 Main St.
- Jadis
- 1912 Macomber, Donald.....West Newton (Newton).
41 Highland St.
- 1892 } MacPherson, William } Canton.
1903 } Ellsworth
- 1904 Macrae, Annie Campbell..Fall River. 130 Rock St.
- 1904 Madden, William Daniel..Boston. 669 Mass. Av.
- 1905 Magrath, George Burgess..Boston. 274 Boylston St.
- 1898 Maguire, Charles Francis..Somerville. 432 Medford St.
- 1906 Maguire, Eugene Leo.....Somerville. 390 Medford St.
- 1908 Magune, Frank Leroy.....Worcester. 28 Pleasant St.
- 1903 Magurn, Francis Thomas..Charlestown (Boston).
Louis
112 Main St.
- 1913 Mahar, Harold Robert.....Orange. 1 High St.
- Collins
- 1904 Mahoney, Daniel Francis..Boston.
522 Commonwealth Av.
- 1898 Mahoney, Edward Joseph..Springfield. 4 Matteson St.
- 1905 } Mahoney, Francis Xavier.. } Dorchester (Boston).
1915 } 701 Columbia Rd.
- 1896 Mahoney, George Clifton..West Somerville (Somer-
ville). 97 College Av.
- 1917 Mahoney, John Lewis.....Boston. 419 Boylston St.
- 1888 Mahoney, Stephen Andrew..Holyoke. 430 Dwight St.
- 1913 Mahoney, Walter Francis..Westborough. 39 South St.
- 1892 Mahony, Francis Ronan....Lowell. 8 Merrimack Sq.
- 1899 Mains, Charles Frederick..Dorchester (Boston).
208 Ashmont St.
- 1915 Mains, Herbert Llewellyn..Danvers. 71 Holton St.
- 1905 Makechnie, Arthur North..Cambridge. 14 Upland Rd.
- 1879 Makechnie, Horace.....West Somerville (Somer-
ville). 238 Elm St.
- 1891 Mallory, Frank Burr.....Brookline
Office, Roxbury (Boston).
240 Longwood Av.
- 1903 Malone, Charles.....Jamaica Plain (Boston).
3 Glen Rd.
- 1908 Maloney, John Martin....Springfield. 559 Liberty St.
- 1893 Manahan, Herbert.....Lawrence.
Wellington
104 South Broadway.
- 1901 Mandell, Augustus Hamlin..New Bedford.
25 Sycamore St.
- 1893 Mangun, John Joseph....Lynn. 174 South Common St.
- 1902 Manly, Edward Tuck.....Lynn. 59 Lewis St.

- 1908 Mannix, Louis Edward....Chicopee Falls (Chicopee).
112 Main St.
- 1916 Manoogian, Byzant John..Peabody. 65 Main St.
- 1915 Mansfield, Berleigh Burton Union, N. H.
- 1869 Mansfield, Henry Tucker Needham. 897 Highland Av.
#1911
- 1897 Mansfield, James Albert...Dorchester (Boston).
42 Hancock St.
- 1899 Mansur, Leon Wallace.....Los Angeles, Calif.
1109 Brockman Bldg.
- 1912 Marble, Henry Chase.....Boston.
28 Commonwealth Av.
- 1870 Marble, John Oliver #1908 Worcester. 16 Murray Av.
- 1903 Marcle, Walter John.....Minneapolis, Minn.
9th St. and Nicollet Av.
- 1863 Marcy, Henry Orlando....Boston. Office, Cambridge.
860 Mass. Av.
- 1901 Marcy, Henry Orlando, Jr. Newton. 140 Sargent St.
- 1916 Margeson, Reginald Dimock Boston.
520 Commonwealth Av.
- 1903 Markham, Erwin Walter....Lee. Main St.
- 1913 Maroney, Patrick Joseph....Westfield. 16 Chapel St.
- 1913 Marr, Edward Loring.....Melrose. 315 Main St.
- 1907 Marr, Myron Whitmore...Dorchester (Boston).
11 Hopestill St.
- 1912 Marr, Robert McClellan...Westfield. 29 Elm St.
- 1912 Marsden, George.....New Bedford.
1579 Acushnet Av.
- 1915 Marsh, Albert.....Wellesley. Wellesley Av.
- 1910 Marsh, Anna Peabody....Danvers. 155 Center St.
- 1895 Marsh, Arthur White.....Worcester. 690 Main St.
- 1903 Marshall, Augustus Chelsea, Vt.
Thompson
- 1909 Marshall, Herman Weston. Boston. 66 Bay State Rd.
- 1908 Marshall, William Lynn. 26 Broad St.
Reginald
- 1911 Marston, Warren Winfield. Newton.
337 Washington St.
- 1897 Martel, Stanislaus.....Lynn. Office, Boston.
362 Commonwealth Av.
- 1897 Martin, Archibald Herbert. Lynn. 29 Broad St.
- 1916 Martin, David Lorenzo....Dorchester (Boston).
4 Rosedale St.
- 1913 Martin, Edward.....Roxbury (Boston).
217 Warren St.
- 1917 Martin, George Forrest....Lowell. 9 Central Sq.
- 1913 Martin, Harold Winthrop. Roxbury (Boston).
166 Warren St.
- 1898 Martin, Harry Charles....Springfield. 374 Main St.
- 1904 Martin, John Brayton....Lynn. 25 Newhall St.
- 1913 Martin, John Foley.....Boston. 788 Beacon St.
- 1902 Marvell, Mary Wilbur....Fall River.
243 Highland Av.
- 1916 Marvin, Frank William....Cambridge. 1775 Mass. Av.
- 1884 Mason, Atherton Perry....Fitchburg. 745 Main St.
- 1914 Mason, Broadstreet Henry. Worcester. State Hospital.
- 1913 Mason, Gilbert McClellan. Dorchester (Boston).
Office, Boston.
520 Beacon St.
- 1902 Mason, Nathaniel Robert...Boston. 483 Beacon St.
- 1907 Massé, John Baptiste....Lawrence. 277 Broadway.
- 1900 Masten, Charles Howard....Worcester. 919 Main St.
- 1876 Mather, Edward Elias #1910 Wilmamstown.
Box 49.
- 1906 Mather, John Adams.....Colrain.
1907 Mathes, Roy Wentworth...Lynn. 32 Chestnut St.
- 1910 Mathews, Robert Francis...Worcester. 390 Main St.
- 1915 Mathewson, Frank Weedon New Bedford. 250 Union St.
- 1879 Matte, Joseph Hubert North Adams.
Ambrose #1914
82 Church St.
- 1909 May, George Elisha.....Newton Center (Newton).
661 Commonwealth Av.
- 1916 May, James Vance.....Dorchester Center.
(Boston). State Hosp.
- 1899 May, John Shepard.....Roxbury (Boston).
495 Warren St.
- 1905 Mayberry, Frank Eugene...Pittsfield. 184 North St.
- 1916 Mayers, John Edward....South Boston (Boston).
749 Broadway.
- 1902 Mayhew, Orland Smith....Vineyard Haven (Tisbury).
- 1896 McAdams, James Philip...Lowell. 295 Central St.
- 1910 McAdams, Peter Stephens..Cambridge. Office, Boston.
1075 Boylston St.
- 1905 McAllester, Ralph William. Everett. 15 Linden St.
- 1899 McAllister, Frederick Methuen. Office, Lawrence.
Danforth
301 Essex St.
- 1906 McArdle, John Joseph....Lawrence. 477 Essex St.
- 1902 McBain, William Hearst...Malden. 456 Pleasant St.
- 1897 McCabe, John Joseph....Holyoke. 290 Maple St.
- 1905 McCaffrey, Charles Francis. Somerville. 44 Summer St.
- 1913 McCann, Charles Daniel...Brookline. 25 Main St.
- 1915 McCann, Gertrude Fisher..New York, N. Y.
1925 7th Ave
- 1886 McCarthy, Charles Daniel. Malden. 96 Summer St.
- 1917 McCarthy, Charles Daniel Jr. Malden. 96 Summer St.
- 1897 McCarthy, Charles Florence. Winchester. 452 Main St.
- 1892 McCarthy, Eugene Allan...Cambridge. 5 Bigelow St.
- 1908 McCarthy, Eugene Ambrose Fall River. 901 Second St.
- 1908 McCarthy, Eugene Justin. Malden. 17 Garnet St.
- 1916 McCarthy, Francis Patrick. Milton. Office, Boston.
394 Marlboro St.
- 1907 McCarthy, Louis Florence. Malden. 56 Summer St.
- 1897 McCarthy, Thomas Francis Marlborough. Cotting Av.
- 1890 McCarthy, Thomas Brockton. 183 Main St.
Horatio
- 1906 McCarthy, Timothy Jamaica, N. Y. 5 Ray St.
Francis
- 1916 McCartin, John Edward...Dorchester (Boston).
467 Columbia Road.
- 1917 McCarty, Edward Michael Somerville. 30 Walnut St.
- 1878 McCarty, James Joseph...Lowell. 574 Central St.
- 1904 McCausland, William Quincy. 123 Franklin St.
James
- 1875 McClean, George Chesley..Springfield. 337 State St.
#1916
- 1917 McClintock, Elsie.....Gardner.
Henry Heywood Hosp.
- 1912 McClintock, Francis Blake. Chelsea. 27 Crescent Av.
- 1911 McCluskey, Richard John. Lowell. 40 Middlesex St.
- 1908 McClusky, Henry Lincoln...Worcester.
7 Hawthorne St.
- 1912 McConnell, David James..Greenfield. 2 Chapman St.
- 1875 McCormick, Cornelius Waltham. 825 Main St.
Joseph
- 1906 McCormick, John Joseph..Woburn. 60 Montvale Av.
- 1907 McCready, Leo Thomas....Jamaica Plain (Boston).
2 Peter Parley Rd.
- 1911 McCreery, Clarence Charles Somerset. Riverside Av.
- 1906 McCurdy, Theodore Roxbury (Boston).
808 Tremont St.
- 1900 McDermott, Joseph Edward Alexis Charlestown (Boston).
296 Bunker Hill St.
- 1898 McDermott, William Edward Salem. 6 Brown St.
Vincent
- 1903 McDonald, James William. Worcester. 33 Trumbull St.
- 1902 McDonald, Samuel James. Boston. 657 Boylston St.
- 1899 McDonald, William Joseph. Brookline. 47 Garrison Rd.
- 1900 McEvoy, George Albert....Dorchester (Boston).
Office, Boston.
520 Beacon St.
- 1894 McEvoy, Thomas Edward..Worcester. 37 Portland St.
- 1898 McFee, William David....Haverhill.
3 Washington Sq.
- 1886 McGannon, Thomas Gerald. Lowell. 36 Nesmith St.
- 1891 McGauran, Michael Lawrence. 266 Broadway.
Sheridan
- 1900 McGee, Fanny Maria.....Waban (Newton).
765 Chestnut St.
- 1893 McGillicuddy, John Worcester. 390 Main St.
Timothy
- 1904 McGillicuddy, Richard Turner's Falls
Aloysius (Montague). Avenue A.
- 1914 McGinity, Joseph Taney...Springfield.
- 1909 McGinley, Michael Charles. Ipswich. Central St.
- 1900 McGirr, Felix Francis....Cambridge.
1436 Cambridge St.
- 1898 McGrath, Bernard Francis. Milwaukee, Wis.
Marquette School, Med.
- 1912 McGraw, Andrew James...Taunton. 61 Broadway.

- 1914 McIntire, Frederic Joseph. Lynn.
63 North Common St.
- 1882 McIntire, Herbert Bruce. Cambridge. 4 Garden St.
- 1908 McIntyre, George Francis. Boston. 69 Bay State Rd.
- 1909 McKallagat, Peter Leo. Lawrence. 301 Essex St.
- 1915 McKeechie, Frederick Springfield. 317 Main St.
- Joseph
- 1897 McKeen, Sylvester Forshay Allston (Boston).
556 Cambridge St.
- 1912 McKelvey, Alexander Toronto, Canada.
- Dunbar
- 1892 McKenna, Francis Patrick Jamaica Plain (Boston).
382 Center St.
- 1893 } McKenzie, John Robert. Cambridge. 897 Mass. Av.
- 1912 }
- 1901 McKibben, William Watson Worcester. 390 Main St.
- 1893 } McKeon, John William Worcester. 53 Lincoln St.
- 1913 }
- 1914 McLaughlin, Allan Joseph Boston. 145 State House.
- 1914 McLaughlin, Arthur Otis Haverhill. 120 Emerson St.
- 1895 McLaughlin, Henry Brookline. Office, Boston.
- Valentine
- 1885 McLaughlin, Joseph Roxbury (Boston).
92 Walnut Av.
- 1910 McLean, John Allan West Somerville (Somerville). 16 Curtis St.
- 1915 McLellan, William Edwin Lynn. 559 Western Av.
- 1901 McLeod, John Scott Roxbury (Boston).
151 Warren St.
- 1913 McMahon, Francis Joseph Brookline.
370 Washington St.
- 1904 McMann, William Henry Jamaica Plain (Boston).
328 Center St.
- 1900 McMurray, Francis Michael Fitchburg. 101 Prichard St.
- 1888 McNally, William Joseph Charlestown (Boston).
31 Monument Sq.
- 1903 McNamara, John James Brockton. 231 Main St.
- 1898 McNeish, Alexander Leicester. Pleasant St.
- 1882 McOwen, William Henry Newton Upper Falls (Newton). 280 Elliot St.
- 1916 McPeake, John Richard Mattapan (Boston).
1585 Blue Hill Av.
- 1905 McPherson, George Edwin Medfield. State Hospital.
- 1903 McPherson, Ross New York, N. Y.
125 East 39th St.
- 1909 McQuade, Lewis Steele Dorchester (Boston).
1081 Blue Hill Av.
- 1898 McQuaid, Thomas Bernard Everett. 487 Broadway.
- 1910 McRae, Alexander John Upper Montclair, N. J.
205 Lorraine Av.
- 1914 McRobbie, Alexander Lynn. 45 So. Common St.
- 1905 McSheehy, Theobald Worcester. 86 Vernon St.
- Coleman
- 1917 McWilliams, Norman Williamstown.
Beattie
- 1897 Mead, Frederick Ammi Willimansett (Chilcopee).
984 Chilcopee St.
- 1892 Mead, George Nathaniel Winchester. 27 Church St.
Plummer
- 1903 Mead, Louis Guy Boston. 259 Beacon St.
- 1912 Means, James Howard Boston. 15 Chestnut St.
- 1906 Means, Philip Corydon Apponaug, R. I.
- 1917 Medalla, David Bernard Boston. 30 Bickerstaff St.
- 1905 Medalla, Leon Samuel Boston. 483 Beacon St.
- 1905 Mechan, Patrick Joseph Lowell. 228 Worthen St.
- 1906 Mehan, Joseph Aloysius Lowell. 4 Park St.
- 1894 Meigs, Return Jonathan Lowell. 226 Merrimack St.
- 1906 Mellen, Eleanor Way Allen Newton Highlands (Newton). 291 Lake Av.
- 1911 Mellen, Harry George Pittsfield. 150 North St.
- 1905 Mellus, Edward Newton. 419 Waverley Av.
- 1905 Mendelssohn, Louis Boston.
362 Commonwealth Av.
- 1894 Mercer, William James Pittsfield. 142 First St.
- 1917 Meredith, Florence Lyndon Watertown.
96 Mt. Auburn St.
- 1916 Mernin, Mary Towler Cambridge. 28 Blake St.
- 1899 Merriam, Franklin Henry South Braintree (Braintree). 37 Holbrook Av.
- 1893 Merrick, Robert Michael Dorchester (Boston).
18 Mt. Ida Road.
- 1914 Merrill, Adelbert Samuel Boston.
244 West Newton St.
- 1905 Merrill, Ayres Philip Pittsfield. 519 North St.
- 1916 Merrill, Charles Henry Lynn. 64 Nahant St.
- 1917 Merrill, Clyde Harold Marlborough.
103 Mechanic St.
- 1915 Merrill, Everett Albert Lynn. 212 Boston St.
- 1896 Merrill, William Howe Lawrence. 301 Essex St.
- 1918 Merritt, Robert Elmer Wollaston (Quincy).
- 1897 Merritt, Silas Virgil Fall River. 297 Osborn St.
- 1900 Merritt, Victor Sulviro Springfield.
141 Wilbraham Road
- 1915 Meserve, Edwin Alonzo Watertown.
266 Belmont St.
- 1883 Messer, Charles Carson Turners' Falls (Montague).
Avenue A.
- 1918 Messier, Adler Eugene Worcester. 151 Grand St.
- 1905 Messenger, Harry Carleton Providence, R. I.
170 Broad St.
- 1896 Metcalf, Ben Hicks Wintthrop.
174 Wintthrop St.
- 1913 Metcalf, Julia Tracy Los Angeles, Calif.
101 South Oxford Av.
- 1914 Metcalf, Richard Providence, R. I.
441 Morris Av.
- 1912 Metzger, Butler Lynn. 153 Lewis St.
- 1914 Meyer, Edward James Somerville. 18 Bow St.
- 1917 Meyers, Hyman Bernard Chelsea. 174 Chestnut St.
- 1901 Middleton, Willis Johnson Quincy. 446 Washington St.
- 1885 Mignault, Rodrigue Lowell. 533 Merrimack St.
- 1909 Miles, Charles Gardner Brockton. 23 Main St.
- 1893 Miles, George Albert West Somerville (Somerville). 56 Chester St.
- 1867 Millard, Henry James North Adams.
1905 St. Church St.
- 1892 Miller, Charles Herman Dorchester (Boston).
The Peabody, Ashmont St.
- 1877 Miller, Ernest Parker Fitchburg. 408 Main St.
- 1910 Miller, George Fremont Boston.
132 Huntington Av.
- 1895 Miller, Lester Colwell Worcester. 14 Oxford St.
- 1900 Miller, Percy Farrington Harwich. Main St.
- 1912 Miller, Richard Henry Boston. 279 Clarendon St.
- 1900 Miller, Samuel Osgood Three Rivers (Palmer).
- 1880 Millet, Charles Sumner Brockton. 23 Main St.
- 1913 Millett, Frank Albertus Greenfield 17½ Federal St.
- 1898 Milliken, Charles Warren Barnstable
- 1915 Mills, Alfred Ewing Somerville. 192 Central St.
- 1893 Milot, Alphonse François Taunton. 462 Bay St.
- 1900 Milot, Wilfrid François Attleborough. 27 Bank St.
- 1912 Mindlin, Carl Haverhill.
343 Washington St.
- 1915 Miner, Leroy Matthew Newtonville (Newton).
Simpson Office, Boston.
- 1891 Miner, Worthington Ware. 37 Main St.
Warner
- 1916 Minster, Francis Gabriel Allston (Boston). Office.
Boston. 419 Boylston St.
- 1912 Minot, George Richards Boston. 188 Marlboro' St.
- 1877 Minot, James Jackson Boston. 188 Marlboro' St.
- 1896 Minshall, Arthur Gladstone Northampton. 16 Center St.
- 1918 Mintz, Samuel Charles Boston. 419 Boylston St.
- 1893 Mitchell, Arthur Medfield.
- 1897 Mitchell, Harry Walter Warren, Pa. State Hosp.
- 1901 Mitchell, William Needham Highlands
(Needham).
- 1908 Mixter, Charles Galloupe Boston. 180 Marlboro' St.
- 1881 Mixter, Samuel Jason Boston. 180 Marlboro' St.
- 1907 Mixter, William Jason Boston. 180 Marlboro' St.
- 1900 Moockel, Carl Richard Lawrence. 443 Broadway
- 1918 Mole, Marguerite Winifred Brookline. 71 St. Mary St.
- 1904 Molina, Charles Sunderland.
- 1911 Monahan, Edward James Revere. 665 Beach St.
- 1914 Monahan, John Ambrose Clinton. 181 Chestnut St.
- 1913 Monerleff, William New Bedford.
Armitage
- 142 Merrimack St.

- 1894 Mongan, Charles Edward...Somerville. 24 Central St.
 1880 Monks, George Howard....Boston. 51 Commonwealth Av.
 1916 Montague, Charles Elbert...Wakefield. 15 Richardson St.
 1907 Monty, Adelbert Howard...Holyoke. 255 Maple St.
 1898 } Moody, Flora Frost...Springfield.
 1911 } 77 Dartmouth St.
 1911 Moore, Frederick Porter...East Norfolk (Norfolk).
 1911 Moore, George Albert....Brookton. 31 West Elm St.
 1915 Moore, George Andrew....Palmer. 92 Thorndike St.
 1904 } Moore, George Colton....Boston. 16 Union Park.
 1914 }
 1913 Moore, Howard.....Newton. Office, Boston.
 272 Newbury St.
 1898 Moore, John Henry.....Boston. 419 Boylston St.
 1914 Moore, Mary Teresa...Brighton (Boston).
 Veronica Office, Boston.
 1402 Commonwealth Av.
 1901 Moore, Philip Patrick....Gloucester. 58 Middle St.
 1903 Mooring, Scott Webber....Gloucester. 738 Washington St.
 1907 Moran, Charles Leo.....U. S. Navy.
 1872 Moran, John Brennan Allston (Boston).
 1908 } 168 Allston St.
 1911 Morgan, Charles Russell...Boston. 1091 Boylston St.
 1885 Morgan, John.....Boston. 39 Huntington Av.
 1903 Morgner, Richard August...Fitchburg. 429 Main St.
 1917 Moriarty, John Joseph....Danvers. 5 Page St.
 1914 Moriarty, Patrick Maurice...Springfield. 820 State St.
 1878 Morong, Arthur Bennett....Boston. 12 Blackwood St.
 1918 Morris, Abraham Samuel...Haverhill.
 403 Washington St.
 1891 Morris, George Patrick....South Boston (Boston).
 811 Broadway.
 1891 Morris, James Stewart....Revere. 648 Beach St.
 1889 Morris, John Gavin.....South Boston (Boston).
 97 Broadway.
 1873 Morris, Michael Augustine...Charlestown (Boston).
 Office, Boston.
 390 Commonwealth Av.
 1897 Morris, Richard Holt.....Everett. 39 Corey St.
 1907 Morrison, Archibald Weeks' Mills, Me.
 Benjamin
 1910 Morrison, Hyman.....Dorchester (Boston).
 103 Glenway St.
 1917 Morrison, Lawrie Byron...Boston. 374 Marlboro' St.
 1908 Morrison, Robert Francis...Holyoke. 32 Main St.
 1887 Morrison, William East Boston (Boston).
 Alexander 80 Princeton St.
 1913 Morrison, William Reid...Boston. 527 Beacon St.
 1892 Morrow, Charles Harvey...Gloucester. 46 Pleasant St.
 1906 Morrow, William Robert...Framingham. 21 Irving St.
 1898 Morse, Almon Gardner....Hingham. Office, Boston.
 421 Marlboro' St.
 1892 Morse, Charles Ellsworth...Wareham. Main St.
 1887 Morse, Frank Adelbert....Lynn. 11 Lincoln St.
 1896 Morse, Frank Leander....Somerville. 78 Highland Av.
 1885 Morse, Fred Harris.....Winthrop. Office, Boston.
 402 Boylston St.
 1910 Morse, George W.....Boston. 30 Pinckney St.
 1878 Morse, Henry Lee.....Medfield. North St.
 1910 Morse, Irene May.....Clinton. 124 Water St.
 1890 Morse, John Lovett....Boston. 70 Bay State Rd.
 1905 } Morse, Nathaniel Niles...Mattapan. Office, Boston.
 1914 } 69 Newbury St.
 1909 Morse, Roy Sydney.....Ashland.
 1898 Mosher, Harris Peyton....Boston. 828 Beacon St.
 1914 Mosher, Marshall James...Waltham. 925 Main St.
 1914 Mossman, George.....Westminster. 66 Main St.
 1915 Mott, George Ernest....Lynn. Gen. Electric Co.
 1916 Moulton, Allen Thomas...Roxbury (Boston). Office, Boston. 483 Beacon St.
 1909 Mudge, Otis Pope.....Amesbury. 152 Main St.
 1913 Mulcahy, William Edward...Springfield. 247 Eastern Av.
 1916 Muldoon, Mary Theresa...Somerville. 40 Crescent St.
 1908 Mullen, Peter James.....Amesbury. 140 Main St.
 1884 Munro, Walter Lee.....Providence, R. I.
 189 Waterman St.
 1906 Munroe, Harrington Los Angeles, Calif.
 Bennett 7028 Hollywood Boul'vd.
 1901 Murdock, Frederick William Brockton. 54 West Elm St.
 1908 Murphy, Anna Frances...Worcester. 5 King St.
 1903 Murphy, Daniel David....Amesbury. 174 Main St.
 1915 Murphy, Daniel Francis...Beverly Farms (Beverly).
 28 Vine St.
 1914 Murphy, Edward Roxbury (Boston).
 Frederick 1451 Tremont St.
 1904 Murphy, Edward Martin...Lowell. 175 Central St.
 1900 Murphy, Edward Vincent...Newport. R. I. 118 Mill St.
 1895 Murphy, Emily Frances....Taunton. 23 Summer St.
 1884 Murphy, Francis Charles...Boston. 315 Marlboro' St.
 1904 Murphy, Frank Augustine...Taunton. 4 Fruit St.
 1902 Murphy, Fred Towsley....St. Louis, Mo.
 1806 Locust St.
 1905 Murphy, Frederick Paul...Lowell. 219 Central St.
 1905 Murphy, Frederick Vincent...Attleborough. 51 Bank St.
 1917 Murphy, Harold Alphonsus Jamaica Plain (Boston).
 330 Center St.
 1913 Murphy, John Joseph....Cambridge. 3 Norris St.
 1882 Murphy, Joseph Briggs....Taunton. 23 Summer St.
 1913 Murphy, Joseph Leroy....Taunton. 23 Summer St.
 1905 Murphy, Thomas William...Lawrence. 245 Broadway.
 1898 Murphy, Timothy Joseph...Roxbury (Boston). Office, Boston. 520 Beacon St.
 1910 Murray, Benjamin Frank...Boston. 6 Beacon St.
 1910 Murray, Patrick Joseph...Dorchester (Boston).
 162 Harvard St.
 1907 Myers, Elizabeth Young...Springfield.
 11 St. James Av.
 1903 Myers, Samuel William...Boston. 34 McLean St.
 1903 Myers, Solomon.....East Boston (Boston).
 93 Lexington St.
 1904 Myles, Leo Thomas.....Cambridge. 146 Oxford St.
 1910 Myrick, Alfred Winthrop...Randolph.
 1901 Myrick, Hannah Glidden...Roxbury (Boston). N. E. Hospital.
 1909 Mysel, Hymen Abraham...Haverhill.
 310 Washington St.
 1913 Mysel, Philip.....Boston. 20 Prince St.
- ## N
- 1899 Nason, Arthur Clark.....Newburyport. 194 High St.
 1895 Nason, Osman Cleander...Chelsea. Soldiers' Home.
 Baker
 1908 Neff, Irwin Hoffman....East Norfolk (Norfolk).
 State Hospital.
 1903 Nelligan, John Patrick....Cambridge. 2336 Mass. Av.
 1912 Nelson, Christian Augustus...Cambridge. 1010 Mass. Av.
 1908 Nettle, Paul.....Haverhill. 207 Groveland St.
 1907 Nevers, Harry Hill.....Lawrence. 246 Andover St.
 1917 New, Way Sung.....Boston. Mass. Gen. Hosp.
 1897 Newell, Franklin Spliman...Boston. 443 Beacon St.
 1901 Newhall, Avery Lester....Lynn. 7 Vine St.
 1909 Newhall, Harvey Field....Lynn. 51 Nahant St.
 1886 Newhall, Herbert William...Lynn. 82 Broad St.
 1886 Newhall, Lawrence Brookfield.
 Thompson
 1899 Newton, Aaron Lewis....Northfield.
 1914 Newton, Edward Roswell...Somerville. Office, Boston. 419 Boylston St.
 1916 Newton, Frank Loomis Somerville. 34 Highland Av.
 Sabin
 1908 Newton, Ralph Waldo....U. S. Army.
 1909 Newton, Roland Stephen...Westborough. 50 West Main St.
 1898 Newton, William Curtis...Revere. 270 Broadway.
 1870 Nichols, Arthur Howard...Boston. 55 Mt. Vernon St.
 1911
 1890 Nichols, Edward Hall....Boston. 294 Marlboro' St.
 1892 Nichols, John Holyoke....Tewksbury. State Infirmary.

- 1884 Nickerson, George.....Stoneham. 55 Central St.
Wheatou
- 1902 Nickerson, John Peter.....West Harwich (Harwich).
1911 Nield, William Andrew.....New Bedford. 62 Fifth St.
1899 Nielsen, Edwin Björne.....West Newton (Newton).
Office, Boston.
- 1900 Nightingale, James.....Worcester. 138 Franklin St.
1915 Nigro, Michele.....Chelsea. Frost Hospital.
1915 Niles, Edward Harry.....Danvers. 66 Elm St.
1917 Niles, John Otis Garfield.....Everett. 304 Ferry St.
1874 Nims, Edward Beecher.....Springfield. 40 Harvard St.
†1903
- 1916 Nissen, Harry Archibald.....Brookline.
85 Abbotsford Road.
- 1895 Noble, Angenette Fowler.....Westfield. 21 Noble St.
1915 Noble, Ermy Corser.....Mattapan (Boston).
State Hospital.
- 1906 Noble, Mary Gill.....Mattapan (Boston).
State Hospital.
- 1902 Nolen, Walter Freeman.....Boston. 535 Beacon St.
1911 Noonan, William Andrew.....Cambridge.
472 Cambridge St.
- 1914 Normand, Jean Napoleon.....Fall River. 183 Hunter St.
1885 Norris, Albert Lane.....Malden. 253 Clifton St.
†1907
- 1903 Norris, Albert Percy.....Cambridge. 2 Garden St.
1916 Norris, Rolf Clarke.....Methuen. 10 Grove St.
1886 Norton, Eben Carver.....Norwood.
792 Washington St.
- 1903 Norton, George Edward.....Cambridge. 102 River St.
1900 Norton, George Paul.....Fitchburg. 24 Prichard St.
1910 Norton, Herbert Rozelle.....Dorchester (Boston).
11 Bloomfield St.
- 1917 Noyes, Arthur Percy.....Roxbury (Boston).
74 Fenwood Rd.
- 1881 Noyes, Ernest Henry.....Newburyport. 12 Essex St.
1908 Noyes, John Russell.....Brookton. 63 Main St.
1905 Noyes, Margaret Louise.....Boston. 101 Newbury St.
1890 Noyes, Nathaniel Kingsbury.....Duxbury. Washington St.
1914 Nute, Albert James.....Boston. U. S. Immigration
Station.
- 1898 Nute, Marion.....Dorchester (Boston).
Office, Boston.
483 Beacon St.
- 1917 Nutt, Walter Elwyn.....Methuen. 34 Lowell St.
1903 Nye, Harry Royal.....Leominster. 27 Cotton St.
- O**
- 1906 } Oak, Charles Arthur.....Lynn. 183 Franklin St.
1916 }
- 1901 Ober, Frank Roberts.....Boston. 234 Marlboro' St.
1904 Ober, Ralph Beverley.....Springfield. 76 Maple St.
1912 O'Brien, Carl Robert.....Bangor, Me. 6 State St.
1903 O'Brien, Charles Thomas.....Woburn. 11 Pleasant St.
1905 O'Brien, Daniel Paul.....New Bedford.
330 Union St.
- 1912 O'Brien, Edward Joseph.....Brighton (Boston).
Office, Boston.
543 Boylston St.
- 1917 O'Brien, John Charles.....Greenfield. 308 Main St.
1911 O'Brien, Frederick.....Boston. 483 Beacon St.
- William
- 1903 O'Brien, John Francis.....Charlestown (Boston).
Office, Boston.
520 Beacon St.
- 1911 O'Brien, John Francis.....Fall River. Union Hosp.
1911 O'Brien, John Francis.....Taunton. State Hospital.
1905 O'Brien, Joseph Jeremiaah.....Dorchester (Boston).
2175 Dorchester Av
- 1900 O'Brien, Thomas James.....Boston. 501 Beacon St.
1902 O'Brien, Walter John Leo.....Jamaica Plain (Boston).
218 South St.
- 1885 O'Callaghan, Mary Vincent.....Worcester. 137 Pleasant St.
1905 O'Connell, Andrew Edward.....Worcester. 518 Main St.
1902 O'Connor, Dennis Francis.....Worcester. 340 Main St.
1893 O'Connor, James Bernard.....Lowell. 188 Moore St.
1901 O'Connor, John Francis.....Worcester. 25 Portland St.
- 1896 O'Connor, John Henry.....Hyde Park (Boston).
26 Oak St.
- 1910 } O'Connor, Joseph William Worcester. 13 Elm St.
1915 }
- 1911 O'Connor, Patrick Henry.....New Bedford.
240 County St.
- 1903 O'Day, George Frederick.....Worcester. 10 Vernon St.
1916 Odeneal, Thomas Helm.....Beverly. 163 Cabot St.
1881 O'Donnell, Francis Michael.....Newton.
619 Washington St.
- 1912 O'Donnell, George Thomas.....Waltham. 768 Main St.
1914 Oeser, Paul Richard.....Lawrence. 272 Jackson St.
1892 Ogden, Jay Bergen.....New York, N. Y.
1 Madison Av.
- 1913 O'Hare, James Patrick.....Boston.
536 Commonwealth Av.
- 1908 O'Keefe, Abbie Mabel.....Northampton. 33 Elm St.
1899 O'Keefe, Daniel Thomas.....Jamaica Plain (Boston).
28 Glen Road.
- 1914 O'Keefe, Edward Scott.....Lynn. 164 Essex St.
1907 O'Leary, Joseph Augustus.....Wakefield. 16 Chestnut St.
1895 Olin, Francis Henry.....Southbridge. Hamilton St.
1912 Olin, Harry.....Roxbury (Boston).
444 Warren St.
- 1906 Oliver, Everard Lawrence.....Boston.
362 Commonwealth Av.
- 1855 Oliver, Henry Kemble.....Boston.
†1898
- 1905 O'Malley, Edward Francis.....Fitchburg. 36 Prichard St.
1913 O'Meara, John George.....Providence, R. I.
1547 Westminster St.
- 1891 O'Meara, Michael John.....Worcester.
17 Wellington St.
- 1897 O'Neil, Richard.....Boston. 379 Beacon St.
Frothingham
- 1916 Orcutt, Wallace Lyman.....West Newbury. Main St.
1904 Ordway, Clarence Eugene.....Winchester. 371 Main St.
1905 Ordway, Mabel Dyer.....Jamaica Plain (Boston).
6 Parley Vale.
- 1905 Ordway, Thomas.....Albany, N. Y.
Albany Medical College.
- 1916 O'Reilly, Francis Augustine.....Lawrence.
249 Haverhill St.
- 1914 O'Reilly, William Francis.....Lynn.
144 South Common St.
- 1914 O'Rourke, Edward James.....Cambridge. 2280 Mass. Av.
1902 Osborne, Caroline Amelia.....Worcester.
145 Woodland St.
- 1903 Osborne, Ernest Sumner.....West Dennis (Dennis).
1905 Osgood, George.....Cohasset.
1904 Osgood, George Edward.....West Somerville
(Somerville).
- 1892 Osgood, Gilman.....Rockland. 258 Union St.
1918 Osgood, Herman Ashton.....Boston. 462 Boylston St.
1901 Osgood, Robert Rayley.....Boston. 372 Marlboro' St.
1911 O'Sullivan, Anna.....Boston. 175 Dartmouth St.
1899 O'Sullivan, John Joseph.....Lawrence.
340 Haverhill St.
- 1876 Otis, Edward Osgood.....Boston. 381 Beacon St.
1881 Otis, Walter Joseph.....Boston. 267 Beacon St.
1909 O'Toole, John Laurence.....Bradford (Haverhill).
112 Main St.
- 1894 Ott, George John.....Boston. 419 Boylston St.
1917 Overholser, Winfred.....Wellesley Hills
(Wellesley).
- 1913 Overlander, Charles.....Boston. 520 Beacon St.
Leonard
- 1910 Overlander, John Elliot.....Springfield. 84 Maple St.
1899 Overlook, Melvin George.....Worcester. 774 Main St.
1876 Oviatt, George Alexander.....South Sudbury (Sudbury).
1912 Owen, Albert Simpson.....Framingham. 44 Lincoln St.
- P**
- 1895 Packard, Edward Albert.....Boston. 908 Beacon St.
1916 Packard, Fabian.....Boston. City Hospital.
1903 Packard, Frederic Henry.....Waverly. McLean Hosp.

- 1892 Phelps, John Samuel.....Boston.
76 Commonwealth Av.
- 1907 Phelps, Olney Draper.....Worcester. 452 Main St.
- 1892 Phelps, Olney Windsor.....Warren. Maple St.
- 1914
- 1910 Philbrick, Roscoe Hunter...East Northfield
(Northfield).
- 1901 Phillips, Charles Henry...Beverly. 376 Cabot St.
- 1915
- 1907 Phillips, Wilson Frank....Dorchester (Boston).
138 Norfolk St.
- 1887 Phippen, Hardy.....Salem. 84 Washington Sq.
- 1904 Phippen, Walter Gray.....Salem. 31 Chestnut St.
- 1910 Phipps, Cadis.....Boston. 31 Mass. Av.
- 1880 Phipps, Walter Andros.....Wollaston (Quincy).
308 Safford St.
- 1895 Pierce, Appleton Howe.....Leominster. 100 West St.
- 1887 Pierce, Frank Benneville...Haverhill. 132 Main St.
- 1898 Pierce, George Burgess.....Boston. P. O. Box 2633.
- 1882 Pierce, Matthew Vassar....Milton. Canton Av.
- 1886 Pierce, Willard Henry...Bernardston. Office, Greenfield. 191 Main St.
- 1909
- 1903 Pierce-Higgins, Eudora...Taunton. 175 High St.
- 1886 Pigeon, James Cogswell...Roxbury (Boston).
Du Maresque 27 Elm Hill Av.
- 1905 Pike, Forrest Fay.....Melrose. 67 Wyoming Av.
- 1892 Pike, Forrest Wiley.....Portsmouth, N. H.
4 Pleasant St.
- 1901 Pike, Winfred Carle.....Boston. 82 Huntington Av.
- 1906
- 1916 Pillsbury, Arthur Russell. Allston (Boston).
16 Idlewild St.
- 1900 Pillsbury, Boyden Harlin...Lowell. 8 Merrimack St.
- 1897 Pillsbury, Ernest Dean....West Somerville (Somerville). 8 Curtis St.
- 1909 Pillsbury, Fitzroy...Lowell. 9 Central St.
Farnsworth
- 1870 Pillsbury, George Harlin...Lowell. 58 Central St.
- 1869 Pinkham, Joseph Gurney...Lynn. 64 Nahant St.
- 1895 Piper, Frank.....Boston. 39 Hancock St.
- 1910 Piper, Fred Smith.....Lexington. 20 Clarke St.
- 1885 Pitcher, Herbert Frank....Haverhill.
50 Merrimack St.
- 1901 Pitta, Joao Carlos da Silva..New Bedford. 57 Allen St.
- 1907 Place, Edwin Hemphill....Boston. 745 Mass. Av.
- 1899 Place, Ralph Waldo.....Somerville. 165 Medford St.
- 1907 Playse, Linn Foss.....Dopkinton. 14 Church St.
- 1879 Plimpton, Lewis Henry....Norwood. 40 Walpole St.
- 1890 Plummer, Edward.....Charlestown (Boston).
Maverick 5 Adams St.
- 1897 Plummer, Frank Joseph....Malden. 162 Ferry St.
- 1906 Plunkett, Harold Brabazon..Lowell. 9 Central St.
- 1907 Pofcher, Elias Harry.....Worcester. 60 Green St.
- 1887 Poirier, Emile.....Salem. 7 Harbor St.
- 1915 Poirier, George Henri....Boston. 394 Marlboro' St.
- 1903 Poirier, Horace.....Salem. 173 Lafayette St.
- 1917 Pollock, Henry Meeker....Boston. Mass. Hom. Hosp.
- 1902 Pond, Bernard Wesley....Boston. 180 Huntington Av.
- 1908 Pond, Lucius Beverly....Easthampton. 113 Main St.
- 1886 Pone, Emily Frances.....Boston. 163 Newbury St.
- 1887 Pope, Frank Fletcher.....Ashby.
- 1911 Popoff, Constantine.....Haverhill.
50 Merrimack St.
- 1892 Porter, Charles Allen.....Boston. 116 Beacon St.
- 1916 Porter, Charles Terrell...Waltham. Office, Boston.
520 Commonwealth Av.
- 1873 Porter, Frank Edward...Auburndale (Newton).
1877 499 Auburn St.
- 1903 Porter, Robert Brastow...North Easton (Easton).
4 Day St.
- 1870 Post, Abner.....Boston. 16 Newbury St.
- 1904 Pote, Leonard Holden....Somerville. 375 Broadway.
- 1889 Pothler, Joseph Charles....New Bedford.
247 Fourth St.
- 1901 Potter, Alexander Carleton..Cambridge. Office Boston.
522 Commonwealth Av.
- 1896 Potter, Frances Wason....Framlingham.
11 Lexington Av.
- 1907 Potter, John Claude.....Framlingham.
53 Concord St.
- 1899 Potter, Lester Forest.....New Bedford.
278 Union St.
- 1898 Potts, Joseph Henry.....Holyoke. 143 Chestnut St.
- 1908 Powell, Maud Agatha.....Laconia N. H.
- 1912 Power, George Aloysius....Worcester. 7 Vernon St.
- 1909 Powers, Edward Parnell...Roxbury (Boston).
1615 Tremont St.
- 1905 Powers, George Herman....Boston. 298 Marlboro' St.
- 1905 Powers, H. Hale.....Brookline. 68 Davis Av.
- 1916 Powers, William Joseph...Holyoke. 225 High St.
- 1910 Praino, Gaetano.....South Boston (Boston).
273 Broadway.
- 1868 Pratt, Calvin 1908 Bridgewater. South St.
- 1894 Pratt, Charles Augustus...New Bedford.
60 Orchard St.
- 1908 Pratt, David Damon.....New Bedford.
319 Union St.
- 1915 Pratt, Emily Adelaide....Roxbury (Boston). Office, Boston. 175 Dartmouth St.
- 1913 Pratt, Ezekiel.....Arlington. 374 Mass. Av.
- 1892 Pratt, John Washburn....Dedham. St. Paul Sq.
- 1898 Pratt, Joseph Hersey.....Boston. 317 Marlboro St.
- 1908 Pratt, Mason Ross.....Charlottesville, Va.
Univ. Va. Hosp.
- 1884 Preble, Wallace.....Cambridge.
22 Applan Way.
- 1910 Preble, William Emerson...Boston. 416 Marlboro' St.
- 1908 Prenn, Joseph.....Roxbury. Office, Boston.
536 Commonwealth Av.
- 1867 Prescott, Charles Dudley..New Bedford.
1915 108 South Ash St.
- 1886 Prescott, William Herbert..Forest Hills (Boston).
330 Hyde Park Av.
- 1915 Price, Oscar Jay.....Somerville.
345 Highland Av.
- 1901 Priest, Herbert Bancroft....Ayer.
- 1907 Prince, Calvin Oliver.....Plymouth. 286 Court St.
- 1861 Prince, James Perrott {Durban, Natal.
1866 1902 South Africa.
- 1879 Prince, Morton.....Boston. 458 Beacon St.
- 1881 Prior, Charles Edwin.....Malden. 1 Mountain Av.
- 1903 Pritchard, William...Fall River.
Perclval 12 Hndner Bldg.
- 1896 Procter, Thomas Walter....Sandwich.
- 1891 Proctor, Francis Ingersoll..Wellesley. Office, Boston.
397 Marlboro' St.
- 1897 Proctor, John Donald....Keene, N. H. 61 Winter St.
- 1898 Proctor, Joseph Whipple...Malden. 235 Clifton St.
- 1894 Proctor, Percy Clement....Gloucester. Office, Boston.
514 Commonwealth Av.
- 1907 Proctor, Thomas Melville...Wrentham. South St.
- 1916 Prouty, Ira Humphrey....Marblehead.
69 Pleasant St.
- 1900 Provandie, Paul Hector...Melrose Highlands (Melrose). 8 Ashland St.
- 1914 Provost, Raoul Gaston....New Bedford. 126 Mill St.
- 1912 Pulsifer, Nathan.....Lowell. 40 Middlesex St.
- 1910 Pulsifer, Walter Hall.....Whitman. Bank Block.
- 1906 Purvis, Charles Bureleigh..Brookline. 1455 Beacon St.
1910
- 1877 Putnam, Joseph Morrill....Chelsea. West Medford
1917 (Medford). 62 Austin St.
- 1902 Putnam, Ralph.....Winchester. 127 Main St.
- 1891 Putnam, Willard Abram....Cambridge. 9 Dana St.

Q

- 1886 Qua, Lester Robert.....Pepperell. Main St.
- 1890 Quackenbush, Alexander...Boston. 143 Newbury St.
- 1913 Quennell, Willard Leslie {Tewksbury.
1917 State Infirmary.
- 1905 Quessey, Alfred Henry....Fitchburg. 64 Pritchard St.
- 1909 Quest, James Francis....Boston.
176 Huntington Av.
- 1869 Quinby, Hosea Mason...Worcester 656 Main St.
1911
- 1903 Quinby, William Carter...Brookline. Office, Roxbury
(Boston) P. B. Brigham
Hospital.

1916 Quinn, James Henry.....Springfield.
300 Dickinson St.

1872 } Qulnt, Norman Perkins
1887 } †1912 { West Medway (Medway).

R

1898 Rabe, Edith Ruth Meek Boston. 481 Beacon St.

1914 Rabinovitz, Bernard.....Springfield. 1082 North St.

1912 Rackemann, Francis Minot. Milton. Office, Boston.

1892 Raddin, Frederick Stocker. Chelsea. 448 Broadway.

1917 Rafferty, Thomas Bernard. Lynn. 120 So. Common St.

1892 Rand, John William.....Amesbury. 108 Main St.

1896 Rand, Richard Baxter.....North Abington.
(Abington).

1897 Randall, Clifford Walcott.....Worcester. 723 Main St.

1915 Rapaport, Boris.....Roxbury (Boston).

1896 Rawson, George Wallace.....Amherst. 27 Main St.

1907 Raymond, Charles Stanley. Waverley.
Sch. Feeble-Minded.

1908 Raymond, Katharine Piatt. Wellesley.
Wellesley College.

1904 Raymond, Loring Hay.....Somerville.
146 Highland Av.

1902 Raynes, Myrton Berry.....Melrose.
42 West Emerson St.

1899 Reagh, Arthur Lincoln.....West Roxbury (Boston).
39 Maple St.

1905 Reardon, Daniel Quincy. 22 School St.

1893 Reardon, Timothy Joseph. Boston.
76 Commonwealth Av.

1917 Record, Harold Roland.....East Braintree (Braintree).

1896 Reddy, Joseph Warren.....South Boston (Boston).
211 K St.

1892 Redmond, James William. South Boston (Boston).
512 Broadway.

1907 Redmond, Thomas Henry..Lawrence.
256 Haverhill St.

1916 Reed, Beatrice Alma.....Taunton. State Hospital.

1917 Reed, Carlisle.....Boston. 155 Mass. Av.

1908 Reed, Laurence Bradford. Plymouth. 20 North St.

1898 Reed, Victor Augustus.....Methuen. Office, Lawrence.
477 Essex St.

1883 Reed, William Gilman.....Southbridge. Main St.

1910 Reese, John Arnold.....Attleborough. Office,
Boston. 514 Commonwealth Av.

1916 Reeves, Marcellus.....Boston. 1069 Boylston St.

1913 Regan, James Joseph.....Dorchester (Boston).
Office, Boston.

1912 Reggio, André William.....Boston. 286 Beacon St.

1907 Reid, Isadore Eugene Jamaica Plain (Boston).
Rosenstein Office, Boston. 8 Beacon St.

1910 Reid, William Duncan.....Newton. 78 Waverley Av.

1900 Reilly, James Aloysius.....Dorchester (Boston).
1675 Dorchester Av.

1911 Reilly, Thomas Edward.....Marlborough. 6 Newton St.

1884 Reynolds, Edward.....Boston. 321 Dartmouth St.

1889 Reynolds, Henry Vose.....Brookline.
112 Salisbury Rd.

1913 Reynolds, Ralph Leavitt.....Waterville, Me. 207 Main St.

1866 Rice, Albert Raymond †1906 Springfield. 36 Temple St.

1906 Rice, Allen Galpin.....Springfield. 42 Maple St.

1865 Rice, Austin Bradford Fiskdale (Sturbridge).
†1898

1917 Rice, Florence Frances.....Cambridge. 19 Pleasant St.

1893 Rice, Frederick Winslow.....Brighton (Boston).
16 Elko St.

1908 Rice, John Everts.....Worcester. 390 Main St.

1903 Rice, Robert Astley.....Fitchburg. 2 Crescent St.

1896 Rice, Walter Henry.....Boston. 290 Newbury St.

1903 Rich, Charles Edwin.....Lynn. 65 Broad St.

1894 Richards, Caroline Maria.....Cambridge.
21 Magazine St.

1913 Richards, Cyril Godfrey.....Boston.
Long Island Hospital.

1883 Richards, George Edward Boston. 11 Gloucester St.

†1911

1893 Richards, George Lyman...Fall River.
124 Franklin St.

1891 Richardson, Anna Gove....Boston. 453 Beacon St.

1903 Richardson, Charles Pittsfield. 8 Bank Row.

Harper

1907 Richardson, Cheslie Alvah West Somerville (Somerville). 731 Broadway.

1908 Richardson, Edward Clarence Boston. 224 Beacon St.

Pelron

1904 Richardson, Frank Linden..Boston. 543 Boylston St.

1906 Richardson, Horace Bradford, Me. Box 115.

Kimball

1896 Richardson, Mark Wyman..Jamaica Plain (Boston).
Office, Boston.

1913 Richardson, Oscar.....Boston. 453 Beacon St.

1867 Richardson, William Boston.
225 Commonwealth Av.

Lambert

1895 Richmond, Ernest Dalton..Reading. 24 Woburn St.

1898 Richmond, Simon.....Roxbury (Boston).
271 Humboldt Av.

1918 Ricker, Carroll Henry.....Worcester. 25 Portland St.

1914 Riemer, Hugo Bruno Norwood. Office, Boston.
Charles

1911 Riggs, Austen Fox.....Stockbridge.
20 Beacon St.

1910 Riley, Augustus.....Boston. 857 Beacon St.

1907 Riley, Charles Allen.....Allston (Boston).
1267 Commonwealth Av.

1900 Riley, Elizabeth Angela....Boston. 45 Bay State Rd.

1906 Riley, John Henry.....North Adams. 103 Main St.

1898 Riug, Arthur Haham.....Arlington Heights
(Arlington).

1918 Ring, Arthur Joseph.....Worcester. City Hospital.

1917 Riordan, Arthur Hutton...Indian Orchard
(Springfield).

1906 Riordan, Walter Daniel....Lawrence. 187 Newbury St.

1883 Ripley, Frederick Jerome..Brookton. 12 Cottage St.

1917 Ripley, Harold William....Braintree. 175 West St.

1904 Ripley, Horace Greeley....Taunton. State Hospital.

1903 Ripley, William Littlefield. Brighton (Boston).
19 Oak Sq. Av.

1906 Risley, Edward Hammond..Boston.
520 Commonwealth Av.

1904 Ritter, Henry.....Springfield. 42 Main St.

1906 Roach, Alfred John.....Tewksbury.
State Infirmary.

1915 Robb, Hunter.....Cambridge. 56 Brattle St.

1906 Robbins, Chandler.....Boston.

1918 Robbins, Edward Henry....Somerville. 174 Broadway.

1880 Robbins, Elliott Daniels....Boston. 88 Tremont St.

1901 Robbins, Elmer Ellsworth..New Bedford.
101 School St.

1907 Robbins, Eugene Stanley...New Bedford.
17 South 6th St.

1891 Robbins, Fred Gibson.....Salem. Office, Boston.
129 Marlboro' St.

1906 Robbins, William Bradford. Boston. 355 Marlboro' St.

1897 Roberts, Frederick Alpha..Pittsfield. 230 North St.

1895 Roberts, Linneus Alton....Dorchester (Boston).
699 Washington St.

1911 Robertson, Ewan Lowell. 295 Central St.

Alexander

1914 Robertson, Jessie Cambridge. 2261 Mass. Av.

Wilhelmine

1895 Robey, William Henry, Jr..Boston.
202 Commonwealth Av.

1900 Robie, Alice Hatheway Watertown.
Purvis

1898 Robie, Walter Franklin....102 Mt. Auburn St.

Baldwinsville (Templeton).
Pine Terrace Sanatorium.

1914 Robins, Samuel Alexander. Roxbury. 421 Warren St.

1914 Robinson, Henry Ashton...Marlborough.
38 Cotting Av.

1888 Robinson, Lucy Morton †1915 Brockton. 7 Main St.

1911 Robinson, Solomon.....Worcester. 141 Green St.

1890 Robinson, Thomas Johns...Taunton. 56 Broadway.

- 1893 Robinson, William Henry... Jamaica Plain (Boston).
409 South Huntington Av.
1895 Robinson, William Perry... Haverhill. 1403 Broadway.
1883 } Roche, Thomas Francis... Blackstone.
1898 }
1905 Roche, Thomas Neil... New Bedford.
- 1904 Rochette, Edward Charles... Worcester. 179 County St.
1915 Rochford, Grace Elizabeth... Roxbury (Boston).
61 Parker Hill Av.
- 1914 Rochford, Richard... Springfield.
Augustine 182 Chestnut St.
- 1901 Rockwell, Alfred Elijah... Worcester. 248 Main St.
Perkins
- 1901 Rockwell, Herbert George... Amherst. 25 Main St.
1917 Rockwell, John Arnold, Jr... Cambridge. 24 Garden St.
1912 Rockwell, Lucy Wetherbee... Worcester. 2 King St.
1914 Roderick, Charles Elvin... Taunton. State Hospital.
1914 Rodger, James Yeams... Lowell. Lowell Gen. Hosp.
1903 Rodrick, Albert Fowler... Fitchburg. 33 Prichard St.
1890 Rogers, Albert Edward... Boston. 261 Beacon St.
1909 Rogers, Edmund Augustus... Brookline. 303 Tappan St.
1883 Rogers, Frank Alvin... Everett. 534 Broadway.
1914 Rogers, John Andrews... Nashua, N. H. 63 Main St.
1906 Rogers, Mark Homer... Belmont. Office, Boston.
483 Beacon St.
- 1873 Rogers, Orville Forrest... Dorchester (Boston).
465 Washington St.
1914 Rogers, Orville Forrest, Jr... Dorchester (Boston).
Office, New Haven, Conn.
90 High St.
- 1890 Rolfe, William Alfred... Boston. 330 Dartmouth St.
1902 Rollins, Edwin Theodore... Jamaica Plain (Boston).
17 Gordon St.
- 1916 Roney, Hugh Beverly... Pittsfield.
130 East Housatonic St.
- 1910 Rood, Adolphus Duncan... Whitman. 414 South Av.
1907 Round, Luther Colby... Dorchester (Boston).
Office, Boston.
419 Boylston St.
- 1914 Root, Raymond Richmond... Georgetown.
34 East Main St.
- 1868 Root, Richmond Barbour... Georgetown. 24 North St.
1917
- 1902 Rose, William Henry... Worcester. 13 Elm St.
1904 Rose, William Milton... Cambridge. 230 Prospect St.
1910 Rosen, David William... Boston. 321 Hanover St.
1911 Rosenau, Milton Joseph... Brookline. Office,
Roxbury (Boston).
240 Longwood Av.
- 1907 } Rosenbloom, Carl Webber... Holyoke. 245 Maple St.
1910 }
1914 }
- 1917 Ross, Elizabeth... Cambridge. 10 Chauncy St.
1914 Rothblatt, Harry Lewis... Boston. 13 Allen St.
1907 Roughan, Charles Michael... Lowell. 29 Bridge St.
1885 Round, Arthur Morey... Norton. Taunton Av.
1914 Rounseville, Wilfred... Attleborough. 40 Bank St.
Ellsworth
- 1906 Rowe, Carleton Allen... Milton. 464 Adams St.
1892 Rowen, Henry Stanislaus... Brighton (Boston). Office,
Boston. 520 Beacon St.
- 1917 Rowland, Edward Gould... Natick. 54 W. Central St.
1915 Rowley, Philip William... Gloucester.
1087 Washington St.
1897 Rowley, William... Lauesville (Gloucester).
1087 Washington St.
- 1906 Roy, Joseph Napoleon... Webster. 33 Main St.
1895 Royal, Herbert Benjamin... Harvard. Still River Rd.
1908 } Rubin, Solomon Hyman... Roxbury (Boston).
1915 }
- 1916 Ruble, Wells Allen... Melrose. N.E. Sanatorium.
1868 } Ruddick, William... South Boston (Boston).
1891 } Henderson 1914 } 502 Broadway.
1913 Ruel, Joseph Adjutor... Haverhill. 14 Main St.
1905 Rumrill, Samuel Dudley... Springfield.
346 Rimmon Av.
- 1892 Ruppel, Carl Emil Fraser... Lynn. 23 Nahant St.
1888 Ruppel, Myra Daniel... Lynn. 23 Nahant St.
1906 Rushford, Edward Allan... Salem. 175 Lafayette St.
- 1908 Rushmore, Stephen... Boston.
522 Commonwealth Av.
- 1898 Russell, Edward Ervin... North Adams. 127 River St.
1906 Russell, Frederick James... Letchworth Village, Vt.
P. O., Thiells, N. Y.
State School.
- 1899 Russell, Simon James... Springfield.
154 Chestnut St.
- 1905 Russell, Walter Burton... Springfield. 796 State St.
1904 Ruston, Warren Dunn... West Somerville (Somerville). 744 Broadway.
- 1886 Ryan, Dennis Matthew... Ware. 38 Pleasant St.
1910 Ryan, Sylvester Edward... Springfield. 13 Hancock St.
1912 Ryan, William Francis... Lowell. 219 Central St.
1913 Ryan, William Patrick... Holyoke. 260 Maple St.
1914 Ryder, Bernadette McWeeny... Boston. 483 Beacon St.
1906 Ryder, Delano Richmond... Fall River. 151 Rock St.
1901 Ryder George Hale... Quincy. Office, Boston.
320 Commonwealth Av.
- 1882 Ryder, Godfrey... Malden. 321 Pleasant St.

S

- 1873 Sabine, George Krans... Brookline. 30 Irving St.
1895 Sabine, Jane Downes Kelly... Boston. 348 Marlboro' St.
1911 Sadler, Roy Angelo... Boston. 652 Mass. Av.
1915 Safford, Moses Victor... Jamaica Plain (Boston).
15 Grovenor Rd.
1904 Safford, Wilber Pray... Brockton. 52 Pleasant St.
1895 St. Clair, Austin Emery... Framingham.
63 Concord St.
- 1894 St. Denis, Joseph Nelson... Mattapan (Boston).
74 Blue Hill Av.
- 1893 St. Germain, Joseph Pierre... New Bedford.
13 South 6th St.
- 1895 } St. Marie, Phillipe... Sorel, P. Q., Canada.
1917 }
- 1912 Salles, John Murray... New Bedford.
113 Grinnell St.
- 1916 Saltz, Sidney Myer... Boston. 113 Chambers St.
1909 Sanborn, Byron... Topsfield. Central St.
1876 Sanborn, Edwin Aaron... Somerville. 24 Franklin St.
1915
- 1902 Sanborn, George Phippen... Boston.
320 Commonwealth Av.
- 1897 Sanborn, John Wesley... Roxbury (Boston).
168 Humboldt Av.
- 1881 Sanborn, Perley Lewis... Marblehead. 79 Pleasant St.
1870 Sanders, Charles Barton... Lowell. 475 Westford St.
1909
- 1909 Sandler, Samuel... Fall River. 298 Third St.
1904 Sanger, Guy Edward... Arlington. 1026 Mass. Av.
1918 Sannella, Salvatore... Springfield.
Springfield Hospital.
- 1893 Sargent, Ara Nathaniel... Salem. 116 Federal St.
1880 Sargent, George Amory... Boston. 46 Hereford St.
1896 Sargent, George Bancroft... Lawrence. 477 Essex St.
1907 Sargent, Oscar Franklin... Lawrence. 105 Exeter St.
Libbey
- 1905 Sargent, Walter Leslie... Quincy. 1155 Hancock St.
1913 Saunders, Edmund Louis... Brookline. Office, Boston.
46 Gloucester St.
- 1918 Saunders, Thomas Henry... Webster.
1918 Savage, Ross Elliot... Tisbury. Office, Boston.
543 Boylston St.
- 1908 Savignac, Arthur Noël... Amesbury. 80 Friend St.
1892 Sawin, Robert Valentine... Brimfield.
1907 Sawyer, Alpha Reuben... Roslindale (Boston).
6 Conway St.
- 1883 Sawyer, Edward Allen... Gardner. 402 Elm St.
1901 Sawyer, Edward Keyes... Boston. 419 Boylston St.
1884 Sawyer, Elthu LeRoy... Roslindale (Boston).
6 Conway St.
- 1891 Sawyer, Walter Fairbanks... Fitchburg. 67 Prichard St.
1888 Sayles, Joseph Norland... Taunton. 35 City Square.
1896 Seales, Robert Bass... Dorchester (Boston).
546 Washington St.
- 1905 Scanlan, Thomas John... Dorchester (Boston).
Office, Boston.
543 Boylston St.
- 1917 Scanlon, Joseph Michael... Lawrence. 301 Essex St.

- 1903 Scannell, David Daniel....Boston.
366 Commonwealth Av.
- 1916 Scarito, Nicholas Julius...Lawrence.
125 Haverhill St.
- 1912 Schadt, George Leonard....Springfield. 15 Edwards St.
1910 Schillander, Carl Axel....Springfield. 293 Bridge St.
1910 Schirmer, Joseph Walter...Boston. 272 Newbury St.
1900 Schmidt, Frederick Sextus.Roxbury (Boston).
479 School St.
- 1906 Schmidt, Richard Diedrich.Dorchester (Boston).
14 River St.
- 1909 Schneider, Harry Albert...Wittsfield. 30 North St.
1898 Schneider, Jacob Philip...Palmer. 10 Thorndike St.
1905 Schofield, Otto Lester....Wellesley Hills
(Wellesley).
1915 Schofield, Roger William...Worcester. 771 Main St.
1918 Schön, Edward.....Lynn. 664 Western Av.
1900 Schorer, Cornelia White Plains, N. Y.
Bernhardine Johanna Chatterton Parkway.
1918 Schubmehl, Frank Edward.Lynn. 117 Green St.
1879 Schwab, Emanuel.....Cincinnati, O.
2732 Woodburn Av.
- 1916 Schwartz, George Harvey...East Boston (Boston).
43 Princeton St.
- 1907 Schwartz, Myer.....Lawrence.
118 Franklin St.
- 1895 Scoboria, Arthur Gilmore...Chelmsford.
1885 Scofield, Walter W.....Dalton. Main St.
1910 Scott, George Henry.....Roxbury (Boston).
476 Warren St.
- 1915 Scott, Norman McLean....Boston.
536 Commonwealth Av.
- 1887 Scudder, Charles Locke....Boston. 209 Beacon St.
1884 Sears, George Gray.....Boston. 426 Beacon St.
1897 Sears, Harry Edward.....Beverly. 25 Broadway.
1887 Sears, Henry Francis.....Boston. 86 Beacon St.
1905 Seaver, Edwin Pliny, Jr....New Bedford.
179 William St.
- 1914 Seavey, Hollis Lester.....Cambridge. 1879 Mass. Av.
1917 Sedgley, Frank Robert....West Roxbury (Boston).
19 Mt. Vernon St.
- 1889 Seelye, Ralph Holland....Springfield. 73 Chestnut St.
1902 Seelye, Walter Clark.....Worcester. 390 Main St.
1918 Segal-Roitman, JennieEast Boston (Boston).
46 Saratoga St.
- 1915 Segall, Samuel Kelman....New Bedford.
1208 Acushnet Av.
- 1905 Segur, Willard Blossom....Enfield. Bridge St.
1917 Seibels, Robert Emmet....Springfield.
97 Chestnut St.
- 1908 Senesac, Archibald New Bedford.
1007 South Water St.
- 1914 Sennoit, John Ralph.....Cambridge. 321 Broadway.
1901 Sever, James Warren....Cambridge. Office, Boston.
234 Marlboro' St.
- 1913 Sewall, Edgar Floyd.....Somerville. 281 Broadway.
1904 Seymour, Malcolm.....Boston.
302 Commonwealth Av.
- 1911 Shadman, Alonzo Jay.....West Roxbury (Boston).
157 Center St.
- 1916 Shain, Arthur Irving....Roxbury (Boston).
538 Warren St.
- 1881 Shanahan, John †1918 Peabody. 69 Main St.
1896 Shanahan, Thomas Joseph.Brookline.
155 Aspinwall Av.
- 1910 Shanahan, Timothy Joseph.Somerville. Office, Boston.
419 Boylston St.
- 1915 Shanks, Charles.....New Bedford.
645 Kempton St.
- 1913 Shannahan, Richard Joseph.Worcester. 925 Main St.
1994 Shannon, Nat Vaughan...Cambridge. 891 Mass. Av.
1915 Shapira, Albert Abraham...Boston. 520 Beacon St.
1914 Shapira, Victor Isalah....Boston.
160 Huntington Av.
- 1891 Shatswell, James Arthur...Beverly. 9 Endicott St.
1895 Shattuck, Albert Milo.....Worcester. 21 High St.
1873 Shattuck, Frederick Boston. 135 Marlboro' St.
Cheever
- 1873 Shattuck, George Brune...Boston. 133 Beacon St.
1908 Shattuck, George Cheever...Boston. 205 Beacon St.
- 1907 Shaw, Adam Ernest.....Lowell. 137 Merrimack St.
1893 Shaw, Albert Joel.....Boston. 79 Mountfort St.
1893 Shaw, Arthur John.....Boston. 551 Boylston St.
1915 Shaw, Francis.....Somerville. 57 Cross St.
1904 Shaw, John Port.....Brookline. 6 North Main St.
1906 Shaw, John William.....Newburyport. 7 Orange St.
1897 Shaw, Thomas Bond.....Worcester. 24 Oxford St.
1877 Shaw, Thomas Pierpont Lowell. 110 Eighteenth St.
†1909
- 1918 Shaw, Thomas Wignall....Lynn. 11 Burhill Av.
1908 Shay, Charles Edwin....Roxbury (Boston).
136 Warren St.
- 1895 Shay, Thomas Maguire....Roxbury (Boston).
88 Warren St.
- 1897 Shea, John Joseph.....San Diego, Calif.
1068 Main St.
- 1906 Shea, Michael Ignatius....Chicopee Falls (Chicopee).
112 Belcher St.
- 1902 } Shea, Peter Owen.....Worcester. 106 Millbury St.
1912 }
1909 Sheahan, George Maurice...Quincy. 12 School St.
1916 Sheehan, Edward Bernard.Roxbury (Boston).
Office, Boston.
520 Beacon St.
- 1897 Sheehan, Martin David...Stoneham. 34 Pleasant St.
1893 Sheehan, William Joseph...Salem. 146 Federal St.
1905 Sheehan, William Joseph...South Boston (Boston).
355 West 4th. St.
- 1876 Sheldon, Chauncey Lynn. 73 North Common St.
Coolidge
- 1912 Sheldon, Russell Firth....Boston. 31 Pinckney St.
1912 Shepherd, William Gordon.Ontario, Canada.
1911 Sheppard, Philip Albert Dorchester (Boston).
Edward Office, Boston.
419 Boylston St.
- 1904 Sherburne, Andrew Dorchester (Boston).
Edward 46 Brent St.
- 1913 Sheridan, Philip Edward South Boston (Boston).
Anthony 580 Broadway.
- 1882 Sherman, Frank Morton...West Newton (Newton).
11 Fairview Ter.
- 1894 Sherman, Mary Hastings...Brookfield.
1907 Sherman, Warren Hunter...Westford.
1914 Shields, Ellwood Emlen...Annisquam (Glooucester).
39 Leonard St.
- 1917 Shields, Warren Sylvester.Boston.
106 E. Brookline St.
- 1916 Shine, Honoria Kennedy...Holyoke. 78 Nonotuck St.
1916 Shinn, Philip Allen.....Glooucester. 123 Main St.
1911 Shoemaker, Amzi Bedell...North Attleborough.
123 Commonwealth Av.
- 1906 } Shoban, Joseph.....Boston.
1916 } 366 Commonwealth Av.
1905 Shoninger, Lee Simon.....New York, N. Y.
41 West 55th St.
- 1894 Shores, Harvey Towle.....Northampton. 78 Main St.
1869 Shreve, Octavius Barrell Salem. 29 Chestnut St.
†1906
- 1897 Shultis, Frederick Charles.Leominster. 20 Main St.
1908 Sibley, Benjamin Ernest...Brookline. 1595 Beacon St.
1916 Silberman, Maurice.....Revere. 113 Shirley Av.
1896 Silva, Francis Pierce.....Charlestown (Boston).
206 Main St.
- 1916 Silver, Louis Serebriany...Malden. 230 Bryant St.
1901 Simmons, Channing Boston. 317 Marlboro' St.
Chamberlain
- 1914 Simmons, Edward Burnside.Worcester. 900 Main St.
1905 Simmons, Fred Albert....Brookton. 63 Main St.
1903 Simmons, Hannah Worcester. 900 Main St.
Coralynn
- 1914 Simmons, Ralph Hayward...Fall River. Union Hospital.
1912 Simon, Arthur Leslie....Lawrence. 24 Buswell St.
1917 Simon, Harold Francis...Winchester. 69 Church St.
1885 Simpson, Charles Edward...Lowell. 9 Central St.
1909 Simpson, James Edwin...Salem. 26 Chestnut St.
1903 Sims, Frederick Robertson.Melrose. 79 West Foster St.
1905 Sincitico, Giuseppe.....Lawrence. 3 Jackson Ter.
1903 Sise, Lincoln Fleetford....Medford. Office, Boston.
69 Newbury St.
- 1896 Siskind, Alexander Louis...Lawrence. 272 Broadway.

- 1913 Sisson, Mitchell.....East Boston (Boston).
26 Princeton St.
- 1917 Sisson, Walter Richards...Boston. 270 Bay State Rd.
- 1917 Skirball, Joseph Jacob.....Revere. 146 Shirley Av.
- 1915 Skirball, Louis Irving.....Revere. 146 Shirley Av.
- 1904 Slack, Francis Hervey.....Brookline. 227 Summit Av.
- 1913 Slattery, John Richard.....South Boston (Boston).
Office, Boston.
- 1905 Sleeper, Frank Warren....Dorchester. 520 Beacon St.
(Boston).
- 1906 Slutskin, Maurice Louis....Springfield. 120 Main St.
- 1900 Small, Albert Ernest.....Melrose.
90 West
- 1905 Smalley, Fred Lyman.....Reading. 3
- 1915 Smillie, Wilson George.....Sao Paulo, 1
Laborator
- 1898 Smith, Alfred Charles.....Brookline. 45
Rua Brigade
- 1893 Smith, Charles Morton.....Boston. 47 W. Elm St.
- 1900 Smith, Charlotte.....Manchester, N. H.
- 1916 Smith, Chiron Waterville...Marlborough.
Stewartson 46 Hanover St.
- 1914 Smith, Conrad.....Boston.
38 West Main St.
- 1901 Smith, Edward Shepard....Westfield. 3 Court St.
- 1916 Smith, Edwin Eugene.....Quincy. 899 Hancock St.
- 1912 Smith, Edwin Wallace.....Boston. 19 Bay State Rd.
- 1915 Smith, Ernest Elmer.....Webster. 7 Whitcomb St.
- 1902 Smith, Forster Hanson.....Lowell. 832 Merrimack St.
- 1900 Smith, Frank Herbert.....Madley.
- 1894 Smith, Frank Simpson.....Pittsburg, Pa.
5217 Baum Boulevard.
- 1895 Smith, Fred Stevens.....North Andover. 5 Third St.
- 1894 Smith, Frederick Glazier...Somerville.
145 Highland Av.
- 1882 Smith, George Carroll.....Boston. 483 Beacon St.
- 1910 Smith, George Gilbert.....Boston.
99 Commonwealth Av.
- 1903 Smith, Hervey Lewis.....Springfield. 249 Union St.
- 1895 } Smith, Hiram Fred { Orange.
- 1892 } Markley { 155 South Main St.
- 1901 Smith, Howard Harry.....Boston. 845 Boylston St.
- 1906 Smith, John Hall.....Cambridge. Office, Boston.
657 Boylston St.
- 1910 Smith, John Jay.....Cambridge. 16 Pleasant St.
- 1917 Smith, Lillian Richardson..Worcester. Belmont Hosp.
- 1887 Smith, Mary Almira.....Boston. 33 Newbury St.
- 1889 Smith, Murdoch Campbell...Lynn. 3 Lee Hall.
- 1906 Smith, Myrtle.....Shrewsbury.
- 1897 Smith, Peter Matthew.....Boston. 758 Tremont St.
- 1908 Smith, Richard Mason.....Boston. 329 Beacon St.
- 1874 Smith, Samuel Finley.....Indian Orchard
†1918 (Springfield).
- 1906 Smith, Stafford Baker....New York, N. Y.
97 Myrtle Av.
- 1894 Smith, Thomas Burke.....Lowell. 107 Merrimack St.
- 1884 Smith, Walter Anson.....Springfield. 185 State St.
- 1914 Smith, William David.....Gardner. Office, Boston.
99 Commonwealth Av.
- 1898 Smith, William Henry.....Brookline. Office, Boston.
8 Marlboro' St.
- 1891 Smith, William Lord.....North Grafton (Grafton).
Office, Boston.
2 Newbury St.
- 1917 Smith-Petersen, Marius Boston. 166 Newbury St.
Nygaard
- 1894 Smithwick, Marsena Lexington. Office, Boston.
Parker 483 Beacon St.
- 1902 Smyser, Charles James....New Wilmington, Pa.
- 1911 Smyth, Duncan Campbell...Brookline. Office, Boston.
127 Newbury St.
- 1905 Smyth, Patrick Somers....Brookline. Office, Boston.
69 Newbury St.
- 1903 Snow, Frank Whipple.....Newburyport. 24 Essex St.
- 1899 Snow, Frederick Siedman...Roxbury (Boston).
151 Townsend St.
- 1908 Sobotky, Irving.....Boston. 636 Beacon St.
- 1915 Solomon, Harry Caesar....Jamaica Plain (Boston).
Office, Boston.
530 Beacon St.
- 1894 Sopher, Curtis Levi.....Wakefield. 6 Avon St.
- 1897 Soule, Horace John.....Winthrop. 180 Winthrop St.
- 1904 Southard, Elmer Ernest...Cambridge. Office,
Roxbury (Boston).
240 Longwood Av.
- 1904 Southard, Mabel Austin....Cambridge 70
- 1900 Soutter, Robert.....
- 1917 Sowles.....
- 1915 Spinney, Frederic Ira.....Boston. 4 Columbus Sq.
- 1909 Spooner, Lesley Hinckley...Hingham. Main St.
- 1860 Sprague, Francis Peleg....Boston.
229 Commonwealth Av.
- 1873 } Sprague, Rufus William { Charlestown (Boston).
1891 } 376 Main St.
- 1913 Sprague, Russell Bradford. Boston.
522 Commonwealth Av.
- 1904 Sproull, John.....Haverhill.
50 Merrimack St.
- 1879 Squier, Angelo Orin.....Springfield. 293 Bridge St.
- 1892 Stacey, Charles Franklin...Boston. 456 Audubon Rd.
- 1902 Stack, Charles Francis....Hyde Park (Boston).
1315 River St.
- 1908 Stack, John Joseph.....Boston. 640 Huntington Av.
- 1913 Stafford, Frank Dalmon....North Adams.
56 Summer St.
- 1907 } Stammers, Joseph Collins { New York, N. Y.
1917 } 117 W. 79th St.
- 1880 Standish, Myles.....Boston. 72 St. James Av.
- 1909 Stanley, Francis Guy.....Beverly. 144 Cabot St.
- 1895 Stanley, Josiah Murch....Northborough. Main St.
- 1907 Stansfield, Clarence Fall River.
Winfield 1274 North Main St.
- 1915 Stansfield, Oliver Holt....Worcester.
28 Pleasant St.
- 1903 Stanton, Joseph.....Brighton (Boston).
Office, Boston.
520 Beacon St.
- 1908 Stanwood, Frederic Arthur..Wellesley Hills (Wellesley).
342 Washington St.
- 1893 Staples, Clarence Hathorne Malden. 339 Pleasant St.
- 1893 Stapleton, Richard Henry..Worcester.
146 Franklin St.
- 1893 Starbird, Edward Perley...Dorchester (Boston).
9 Monadnock St.
- 1910 Stearns, Albert Warren....Ellerica. Office, Boston.
520 Commonwealth Av.
- 1903 Stearns, Robert Thomas...Mattapan (Boston).
24 Hazelton St.
- 1868 Stebbins, George Stanford Springfield. 17 Maple St.
†1905
- 1874 Stedman, George.....Boston. 1069 Boylston St.
- 1874 Stedman, Henry Rust.....Brookline. Office, Boston.
48 Beacon St.
- 1901 Steele, Albert Edward....Roslindale (Boston).
61 Robert St.
- 1916 Steele, George Louis.....West Springfield.
16 Boulevard St.
- 1913 Steeves, Ernest Colplitt...Essex. Main St.
- 1918 Steffen, Anna Elizabeth...Boston. Long Island Hosp.
- 1907 Stephens, Frederick Newton Somerville. Office, Boston.
527 Beacon St.
- 1883 Stephenson, Franklin U. S. Navy (retired).
Bache †1913 Claremont, Calif.
425 Harvard Av.

- 1914 Sternberg, Joseph Edward...Roxbury (Boston).
Office, Boston.
100 Boylston St.
- 1895 Stetson, Frank Elliot.....New Bedford. 334 Union St.
- 1898 Stetson, Frederick Winslow...Roxbury (Boston).
504 Warren St.
- 1896 Stetson, Halbert Greenleaf...Greenfield. 17 1/2 Federal St.
- 1869 Stevens, Andrew Jackson...Malden. 599 Main St.
- 1894 Stevens, Charles Benjamin...Worcester. 61 Pearl St.
- 1863 Stevens, Edmund Horace...Cambridge. 1911 Mass. Av.
- 1874 Stevens, George Beekwith...Dorchester (Boston).
1911 346 Seaver St.
- 1906 Stevens, Harold Elmer...Lewiston, Me. 671 Main St.
Ellsworth
- 1897 Stevens, Henry Burt.....West Roxbury (Boston).
Office, Boston.
419 Boylston St.
- 1891 Stevens, Henry Lawrence...New Bedford.
129 Purchase St.
- 1905 Stevens, Horace Paine.....Cambridge. Office, Boston.
520 Commonwealth Ave.
- 1897 Stevens, Sara Elmina.....Koloa, Hawaii. Box 72
- 1886 Stevens, Seriah.....Roslindale (Boston).
942 South St.
- 1915 Stevens, William Russell...Abington. 64 Center Av.
- 1914 Stevenson, Effie Alysne...Hathorne.
- 1904 Stevenson, Willis Mack....North Easton (Easton).
Lincoln St.
- 1909 Stewart, Ralph Carroll....Lowell. 408 Middlesex St.
- 1909 Stewart, Vernon Champney...Woburn. 16 Summer St.
- 1903 Stick, Henry Louis.....Baldwinsville (Templeton).
- 1881 Stickney, Clifford Webster...Holden. Main St.
- 1892 Stickney, Edwin Pangman...Arlington. 58 Pleasant St.
- 1884 Stickney, George Augustus...Beverly. 205 Cabot St.
- 1891 Stiles, Fred Merritt.....Waltham. 292 Moody St.
- 1908 Still, Carroll Wilder.....Haverhill. 156 Main St.
- 1880 Stimson, John Woodbury...Fitchburg. 101 Prichard St.
- 1899 Stockwell, Herbert Emmons...Stockbridge. Main St.
- 1839 Stoddard, Mortimer Joseph...Springfield. 106 Bay St.
- 1914 Stokes, Leroy Tyler.....Haverhill.
355 Washington St.
- 1887 Stone, Arthur Kingsbury...Framingham Center.
Auburn St.
- 1893 Stone, Byron.....North Oxford (Oxford).
1894
- 1901 Stone, Ella Gertrude...Boston. 29 Fayette St.
- 1918
- 1886 Stone, Frank Ellsworth....Lynn. 92 So. Common St.
- 1910 Stone, George Henry.....Roxbury (Boston).
P. B. Brigham Hospital.
- 1914 Stone, Henry Edward.....Dorchester (Boston).
41 Fowler St.
- 1894 Stone, James Savage.....Boston. 234 Marlboro' St.
- 1912 Stone, Jane Gray.....Otisville, N. Y.
Municipal Laboratory.
- 1854 Stone, Lincoln Ripley...Newton. 131 Vernon St.
1907
- 1896 Stone, Moses Cornelius...Wellesley. 18 Belair St.
1908
- 1905 Stone, Ralph Edgerton....Beverly. 360 Cabot St.
- 1909 Stone, Thomas Newcomb...Haverhill. 28 White St.
- 1905 Stoneman, Edgar Amos....Springfield. 14 Clinton St.
- 1888 Storer, Malcolm.....Boston. 476 Boylston St.
- 1906 Storrs, Henry Randolph...Vancouver, B. C.
550 Hastings St. W.
- 1891 Stowell, Edmund Channing...Marlborough, N. H.
- 1903 Stowell, Frank Edgar....Worcester. 19 Elm St.
- 1895 Stowell, Joab.....North Amherst (Amherst).
- 1892 Stowell, Sarah Russell....Marlborough, N. H.
- 1902 Stratton, Ralph Ricker....Melrose. 634 Main St.
- 1904 Street, Charles Edward....Springfield. 2 Maple St.
- 1900 Street, Lionel Alexander...Shanghai, China.
Burnet
- 1914 Streeter, Edward Clark....Boston. 280 Beacon St.
- 1905 Streeter, John Frank....Springfield. 55 Walnut St.
- 1917 Streeter, Howard Alvertus...Pittsfield. 740 Dalton Av.
- 1913 Strong, Richard Pearson...Office, Roxbury.
240 Longwood Av.
- 1915 Strong, Seth Lake.....Marshfield Hills
(Marshfield). Summer St.
Office, Boston.
228 Newbury St.
- 1886 Stuart, Frederic William...South Boston (Boston).
Office, Boston.
236 Clarendon St.
- 1898 Stubbs, Frank Raymond...Newton. 510 Center St.
- 1893 Sturgis, Benjamin...Salem. 28 Pleasant St.
Franklin, Jr.
- 1896 Sturgis, Walter Horatio...Allerton (Hull).
Wakeman
- 1905 Sturnick, Max.....Dorchester (Boston).
12 Columbia Rd.
- 1892 Stutson, William Peckham...Cummington. Main St.
1915
- 1899 Sughrue, Dennis Francis...Roxbury (Boston).
430 Dudley St.
- 1911 Sultor, Henry Albert.....South Deerfield
(Deerfield). Graves Av.
- 1916 Sullivan, Andrew Joseph...Brockton. 155 Main St.
- 1907 Sullivan, Charles Brent...Boston. 520 Beacon St.
- 1906 Sullivan, Cornelius...South Braintree (Bralutree).
Augustine 835 Washington St.
- 1918 Sullivan, Daniel Thomas...Mansfield. 22 Pleasant St.
- 1903 Sullivan, Edward...Springfield. 317 Main St.
Coppinger
- 1915 Sullivan, Elizabeth Ann...Framingham.
Reformatory for Women.
- 1916 Sullivan, Enlick Francis...Holyoke. 115 Suffolk St.
- 1903 Sullivan, Florence...Haverhill.
Augustine 3 Washington Sq.
- 1914 Sullivan, Francis Augustus...Cambridge.
376 Cambridge St.
- 1883 Sullivan, James Edmund...Providence, R. I.
254 Wayland Av.
- 1915 Sullivan, John Albert....Pittsfield. 72 Summer St.
- 1901 Sullivan, John Joseph....Dorchester (Boston).
93 Bowdoin St.
- 1906 } Sullivan, John Joseph....Lawrence. 301 Essex St.
- 1916 }
- 1907 Sullivan, John Thomas....Dorchester (Boston).
Office, Boston.
520 Beacon St.
- 1913 Sullivan, Joseph Cornelius...Springfield. Mercy Hosp.
- 1905 Sullivan, Joseph Lawrence...Roxbury (Boston).
89 Waverley St.
- 1913 Sullivan, Leo Jeremiah....Fall River. 379 Whipple St.
- 1909 Sullivan, Martin George....Winchendon.
216 Central St.
- 1891 Sullivan, Michael Francis...Lawrence. 15 Pine St.
- 1913 Sullivan, Patrick Joseph...Dalton. 30 Carson Av.
- 1889 Sullivan, William Joseph...Lawrence. 267 Essex St.
- 1901 Sumner, Harry Herbert....Lowell 4 Merrimack Sq.
- 1896 Sumner, Philip Sosnoski...Boston. 25 Westland Av.
- 1917 Sundelöf, Ester Mathilda...Fall River. 151 Rock St.
Eleonora
- 1910 Supple, Edward Augustine...Boston. 409 Marlboro' St.
- 1917 Swain, Loring Tiffany....Cambridge.
8 Coolidge Hill Road.
- 1900 Swain, Howard Townsend...Boston.
226 Commonwealth Av.
- 1865 Swan, Charles Walter...Brandford, Conn.
1903
- 1908 Swan, Lawrence Clarke....Beverly. 23 Bow St.
- 1882 Swan, Roscoe Wesley....Worcester. 4 Harvard St.
- 1885 Swan, William Donnison...Cambridge. 167 Brattle St.
- 1891 Swasey, Edward.....Worcester 390 Main St.
- 1863 Swasey, Oscar Fitzallan...Beverly. 24 Hale St.
1900
- 1912 Sweeney, Bartholomew...Leominster. 30 Water St.
Philip
- 1911 Sweeney, Michael Thomas...Atlantic (Quincy).
365 Hancock St.
- 1895 Sweet, Frederick Benoni...Springfield. 81 Chestnut St.
- 1893 Sweetsir, Charles Leslie...Lowell. 276 Westford St.
- 1889 Sweetsir, Frederick...Merrimac. 21 Main St.
Ellsworth
- 1907 Swift, Edith Hale.....Boston.
110 Bay State Road.

1901 Swift, Henry Marshall....Portland, Me.
 30 Deering St.
 1910 Swift, John Baker, Jr.....Boston. 413 Beacon St.
 1907 Swift, Walter Babcock.....Boston.
 110 Bay State Road.
 1905 Sylvester, Abbie Warren....Pittsfield. 150 North St.
 1901 Sylvester, Charles Porter...Hull. Office, Boston.
 460 Audubon Road.
 1914 Sylvester, Nathan West Somerville (Somerville). 1121 Broadway.
 1907 Sylvester, Philip Haskell...Newton Center (Newton).
 866 Beacon St.
 1893 Sylvester, William Hillman, Natick. 6 Clarendon St.
 1900 Symonds, Alice Gertrude...Haverhill. 175 Main St.
 1893 Synan, William Edward...Fall River. 620 William St.

T

(1902 } Tabor, Edward Orlando...Lowell. 18 Shattuck St.
 1915 }
 1897 Taft, Albert Atherton....Keene, N. H. 56 Court St.
 1906 Talbot, Fritz Bradley....Boston. 311 Beacon St.
 1915 Talbot, John Edward....Worcester. 28 Pleasant St.
 1883 Tallman, Augustus East Boston (Boston).
 Littlefield 9 Princeton St.
 1916 Tate, Harry John.....Pittsfield.
 House of Mercy Hosp.
 1915 Taveira, Arthur Joaquim...New Bedford.
 1565 Acushnet Av.
 1894 Taylor, Edward Wyllis....Boston. 457 Marlboro' St.
 1903 Taylor, Erwin Hartwell...Pittsfield. 316 North St.
 1882 Taylor, Frederic Weston...Cambridge. 1735 Mass. Av.
 1901 Taylor, Frederick Leon....Roxbury (Boston).
 45 Center St.
 1893 Taylor, George Lyman....Holyoke. 247 Maple St.
 1900 Taylor, James, Jr.....Worcester. 49 Pearl St.
 (1900 } Taylor, John Danforth...{ East Boston (Boston).
 (1916 } 31 Princeton St.
 1909 Taylor, Roy Arnold.....Waltham. 266 Moody St.
 1908 Taylor, Walter.....Florence (Northampton).
 70 Maple St.
 1909 Tedford, Ada Helena....Woburn. 51 Pleasant St.
 1880 Temple, William Franklin...Boston. 377 Beacon St.
 1913 Temple, William Boston. 377 Beacon St.
 Franklin, Jr.
 1914 Ten Broeck, Carl.....Princeton, N. J.
 Rockefeller Institute.
 1893 Ten Broeck, Stanton Jacob, Orange. 15 Grove St.
 1891 Tenney, Benjamin.....Boston. 308 Marlboro' St.
 1886 Tenney, John Arthur.....Boston.
 151 Huntington Av.
 1894 Tenney, William Northend, Canton.
 756 Washington St.
 1913 Tennis, Matthew Nicholas...Dorchester (Boston).
 89 Hamilton St.
 1892 Thayer, Eugene.....Roxbury (Boston). Office.
 Boston. 419 Boylston St.
 1901 Thayer, Hartley Wales....Newtonville (Newton).
 355 Walnut St.
 1914 Thom, Douglas Armour....Worcester.
 Grafton State Hospital.
 1911 Thomas, Charles Holt....Cambridge. 1718 Mass. Av.
 1912 Thomas, Elmer Ellsworth...Northampton. 160 Main St.
 1889 Thomas, John Jenks....Boston. 88 Ray State Rd.
 1911 Thomas, William Kilpack Cambridge. 1718 Mass. Av.
 Smith
 1897 Thomes, John Blanchard...Pittsfield. 7 North St.
 1914 Thompson, Charles Arthur, Newton Highlands (Newton). 1099 Walnut St.
 1903 Thompson, Charles Edward, East Gardner (Gardner).
 State Colony.
 1891 Thompson, Charles Oscar...Boston. 589 Beacon St.
 1904 Thompson, Frederick Fitchburg. 3 Pleasant St.
 Henry
 1904 Thompson, Frederick Fitchburg. 168 Prichard St.
 Henry, Jr.
 1906 Thompson, George Hocken, North Adams.
 18 Ashland St.
 1917 Thompson, Herbert Ellery...Augusta, Me.
 Hygienic Laboratory.

1915 Thompson, John Stephen...Cambridge.
 1525 Cambridge St.
 1898 Thompson, Peter Hunter...Boston.
 308 Commonwealth Av.
 1916 Thompson, William James, Poughkeepsie, N. Y.
 Hudson River State Hosp.
 1899 Thorn, Edwin Cyrus.....Deerfield.
 1887 Thorndike, Augustus.....Boston. 601 Beacon St.
 1887 Thorndike, Paul.....Boston. 24 Marlboro' St.
 1903 Thorndike, Townsend Boston. 20 Newbury St.
 William
 1893 Thornon, James Brown...Boston.
 168 Huntington Av.
 1907 Thurber, Madison Dorchester (Boston).
 Templeton 91 Savin Hill Av.
 1915 Tiani, Bernardo.....Lawrence.
 SS A. Lawrence St.
 1915 Tibbetts, Guy Daniel....Bennington, N. H.
 1890 Tibbetts, James Thomas...Mineola, N. Y.
 1890 } Tigh, Frederick.....Newburyport. 140 High St.
 1904 }
 1908 Tighe, Michael Aloysius...Lowell. 9 Central St.
 1899 Tilden, Irving Niles....Mattapoisett. Barstow St.
 1913 Tilton, Earle Edward....Newton. Office, Boston.
 453 Beacon St.
 1892 Tilton, Frank Herbert....East Boston (Boston).
 15 Princeton St.
 1882 Tilton, Josiah Odin.....Lexington.
 1911 Timmins, Edward Francis, South Boston (Boston).
 527 Broadway.
 1901 Tingley, Louisa Paine....Boston. 9 Mass. Av.
 1906 Tinkham, Oliver Goldsmith, Brighton (Boston). Office.
 Boston. 527 Beacon St.
 1893 Tirrell, Vinson Meader....South Weymouth
 (Weymouth).
 1881 Titcomb, George Eugene...Concord. 7 Sudbury St.
 1912 Titus, Raymond Stanton...Boston. 355 Marlboro' St.
 1880 Tobey, George Loring....Clinton. 205 Church St.
 1907 Tobey, George Loring, Jr...Boston. 416 Marlboro' St.
 1916 Tobey, Harold Grant Boston. 416 Marlboro' St.
 1886 Tolman, Julia.....Arlington. 695 Mass. Av.
 1913 Tomkies, James Scott....Dallas, Texas.
 St. Paul Sanatorium.
 1906 Toohy, Thomas Victor....Brookline. Office, Roxbury
 (Boston).
 129 St. Alphonsus St.
 1911 Toppan, Roland Lesley...Newburyport.
 148 High St.
 1904 Torbert, James Rockwell...Boston. 252 Marlboro' St.
 1914 Torney, George Henry....Brookline.
 Bournewood Hospital.
 300 South St.
 1913 Torrey, Arthur Stanley...Gloucester.
 164 East Main St.
 1914 Towle, Clarence Clarke....Somerville.
 24 Prospect Hill Av.
 1908 Towle, Edwin Dudley....Salem. 2 Mason St.
 1891 Towle, Harvey Parker....Boston. 453 Marlboro' St.
 1877 Towle, Henry Charles....Dorchester (Boston).
 1428 Dorchester Av.
 1915 Towne, Edward Bancroft...Roxbury (Boston).
 P. R. Brigham Hospital.
 1885 Townsend, Charles Boston. 76 Marlboro' St.
 Wendell
 1901 Townsend, David.....River Glade, N. R.
 1901 Tozler, Charles Herman...Winchester. Office, Boston.
 100 Boylston St.
 1891 Tracy, Edward Aloysius...Dorchester (Boston).
 50 Hancock St.
 1905 Tracy, John Matthew....Springfield.
 166 Chestnut St.
 1910 Tracy, William Leighton...Pittsfield. 316 North St.
 1901 Trainor, John Brett....Fall River.
 1515 South Main St.
 1906 Trainor, Joseph Aloysius...Cambridge. 103 Belmont St.
 1917 Trask, Harry Wallis....West Boylston.
 1906 Trask, John Wilson....Lynn. 171 Lewis St.
 1906 Traves, William Henry....Boston. 511 Mass. Av.
 1894 Treanor, John Peter.....Dorchester (Boston).
 3 Howes St.

- 1917 Watt, George..... Worcester. City Hosp.
1911 Watters, Henry..... Newton Center (Newton).
47 Grafton St.
1907 Watters, William Henry... West Roxbury (Boston).
Office, Boston.
496 Commonwealth Av.
1915 Watts, Harry Adelbert.... Malden. 606 Main St.
1894 Watts, Henry Fowler..... Dorchester (Boston).
Ransford 6 Monadnock St.
1908 Webb, Harold Randall..... Arlington. 409 Mass. Av.
1880 Webber, Frederick Ward... Newton. 465 Cent St.
1865 Webber, Samuel Gilbert... Brookline. 60 Gorham Av.
1911
1915 Webber, Wolfert Gerson... Allston (Boston).
1161 Commonwealth Av.
1888 Webster, George Arthur... Boston. 419 Boylston St.
1890 Weeks, Joshua Franklyn... New Bedford. County Rd.
1894 Weiser, Walter Rupert.... Springfield. 97 Chestnut St.
1894 Welch, Edward John..... Lowell.
10 East Merrimack St.
1913 Weller, John Henry..... State Farm (Bridgewater).
1912 Wells, Charles Edward.... Cambridge. Office,
Boston. Mass. Gen. Hosp.
1907 Wells, David Washburn... West Newton (Newton).
Office, Boston. Hotel
Westminster, Copley Sq.
1878 Wells, Frank..... Boston. 120 Franklin St.
1891 Wentworth, Arthur Howard Boston. 352 Marlboro' St.
1909 Wentworth, Mark Hunking Concord, 26 Lexington Rd.
1874 Wescott, William Henry Roxbury (Boston).
1913 66 Clifton St.
1880 West, Edward Graeff..... Roxbury (Boston).
630 Warren St.
1910 West, Frederick Orin.... Woburn. 57 Pleasant St.
1894 West, George Leon..... Newton Center (Newton).
860 Beacon St.
1894 Weston, George Dake..... Springfield. 70 Main St.
1882 Wetherbee, Roswell..... Cambridge. 798 Mass. Av.
1898 Wetherill, Arthur Bryant... Holyoke. 180 Chestnut St.
1915 Wheatley, Frank Edward... North Abington
(Abington).
174 Adams St.
1884 Wheatley, Frank George... North Abington (Abing-
ton). 174 Adams St.
1893 Wheeler, Alfred Augustus. Leominster.
48 Mt. Pleasant Av.
1894 Wheeler, Charles Douglas... Worcester. 18 Chestnut St.
1908 Wheeler, Charles Holmes... Haydenville
(Williamsburg).
1897 Wheeler, Emma Hammond... New Bedford.
57 Morgan St.
1870 Wheeler, Leonard..... Worcester. 12 Chestnut St.
1900 Wheeler, Lucia Anna.... Wernersville, Pa.
State Asylum.
1915 Wheel, Harry Ray..... Boston.
514 Commonwealth Av.
1906 Whelan, Charles..... Hingham. Central St.
1910 Whelan, Edmond Vincent... Bridgewater. 35 School St.
1894 Whipple, Farrington... Boston. 1079 Boylston St.
Hasham
1885 Whitaker, Clarence Wilder Worcester. 44 Pleasant St.
1905 Whiteche, Burr Royce.... Provincetown. 5 Pearl St.
1916 Whitcomb, Clarence... Springfield.
Adelbert Springfield Hospital.
1910 White, Arthur Joseph.... Mattapan (Boston).
249 River St.
1894 White, Belle Platt..... Springfield. 182 Sumner Av.
1893 White, Charles James.... Boston. 259 Marlboro' St.
1902 White, Clifford Allen.... Granville. P. O. Box 150.
1914 White, Everett..... Lynn. 17 Marlanna St.
1896 White, Franklin Warren... Boston. 322 Marlboro' St.
1914 White, George Arthur.... Cambridge.
170 Harvard St.
1912 White, Henry Alverado.... Taunton.
17 West Britannia St.
1882 White, Herbert Warren... Roxbury (Boston).
151 Humboldt Av.
1910 White, John Robert..... Washington, D. C.
Navy Med. School.
- 1893 White, Leon Edward..... Wellesley. Office, Boston.
390 Commonwealth Av.
1872 White, Levi..... Worcester. 7 Gates St.
1909 White, Lucy Nye..... Winthrop.
818 Winthrop Av.
1899 White, Michael William... Somerville. 21 Walnut St.
1911 White, Paul Dudley..... Dorchester. Office, Boston.
Mass. Gen. Hosp.
1892 White, William Allen.... Roxbury (Boston).
249 Warren St.
1894 Whitehill, George Edward Everett. 516 Broadway.
1897 Whiteside, George... Portland. Ore.
Shattuck 710 Dekum Bldg.
1892 Whiting, George... Somerville.
Washington Whitney 282 Broadway.
1906 } Whitman, Luther Oakes... Amherst. 21 Pleasant St.
1916 }
1886 Whitney, Charles Melville. Boston.
386 Commonwealth Av.
1882 Whitney, Edward Melville. New Bedford.
27 South 6th St.
1905 Whitney, Edward William. Northampton. State Hosp.
1910 Whitney, George Burgess... Haverhill.
252 Washington St.
1901 Whitney, Harriet Wiley... Northampton. State Hosp.
1905 Whitney, Ray Lester..... Waverley (Belmont).
McLean Hospital.
1874 Whitney, William Fiske... Boston. 228 Marlboro' St.
1904 Whitton, Ross Kiltredge... Bedford.
1910 Whittemore, William... Cambridge. 39 Brattle St.
Stewart
1906 Whittemore, Wyman..... Boston. 330 Dartmouth St.
1891 Whitten, George Edwin... Haverhill. 154 Main St.
1887 Whittier, Francis Fremont. Brookline. 94 Harvard St.
1900 Whoriskey, John Joseph... Cambridge. 1712 Mass. Av.
1914 Wickham, Thomas William Boston.
514 Commonwealth Av.
1891 Wilbur, Hubert Granville. Fall River.
292 North Main St.
1887 Wilbur, Sarah Mann..... Springfield. 319 State St.
1910 Wilcox, De Witt Gilbert... Boston.
496 Commonwealth Av.
1907 Wilcox, Henry Hopson... Springfield.
151 North Main St.
1906 Wilder, Winford Oliver... Pittsfield. 34 Fenn St.
1906 Wilinsky, Charles Francis. Boston. 80 Green St.
1914 Wilkins, George Arthur.... Revere. 646 Beach St.
1900 Wilkins, George Clarence... Manchester, N. H.
402 The Beacon.
1909 Wilkins, Samuel Henry... West Medford (Medford).
411 High St.
1917 Willey, Walter Brown, Jr. Brighton (Boston).
St. Eliz. Hosp.
1898 Williams, Abram Case.... Springfield. 137 1/2 State St.
1894 Williams, Augusta Gilbert. Brookline. 278 Walnut St.
1887 Williams, Charles Crosby. Santa Monica Beach, Calif.
933 Fourth St.
1915 Williams, David Lawrence. Boston. 784 Beacon St.
1902 Williams, Edward Denison. Easthampton. 153 Union St.
1894 Williams, Edward Russell. Cambridge. Office, Boston.
1069 Boylston St.
1877 Williams, Francis Henry... Boston. 505 Beacon St.
1915 Williams, Frankwood Earl. Cambridge.
44 Langdon St.
1894 Williams, Frank Percival... Brookline. Office, Boston.
419 Boylston St.
1916 Williams, Frederick Horace Brookline. Office, Boston.
236 Clarendon St.
1917 Williams, Frederick Russell Worcester. 11 Elm St.
1880 Williams, Harold..... Boston. 528 Beacon St.
1887 Williams, Henry Clarence. Boston. 140 Boylston St.
1899 Williams, Hugh..... Boston. 301 Beacon St.
1906 Williams, John Thomas... Boston. 483 Beacon St.
1882 Williams, Joseph..... Dorchester (Boston).
12 Bloomfield St.
1917 Williamson, Cordella... Watertown.
Isabella 57 Pequotsette St.
1898 Willis, Charles Austin.... Waltham. 562 Main St.

- 1914 Willoughby, Earle Carlisle. North Reading.
State Sanatorium.
- 1894 Wilson, Charles Oscar.....Lowell. 614 Gorham St.
- 1913 Wilson, Charles Moore.....Salem. 54 Washington St.
- 1910 Wilson, Edmund Winfred. Boston. City Hospital.
- 1904 Winchester, George Wesley. Mattapan (Boston).
1411 Blue Hill Av.
- 1888 Winn, Charles Henry.....Roxbury. 1474 Tremont St.
- 1908 Winslow, Benjamin Sabert. New Bedford.
1065 South Water St.
- 1893 Winslow, Edward Smith. Easthampton. 103 Main St.
- 1903 Winslow, Frederick.....Boston. 275 Clarendon St.
- 1897 Withee, Frederick. Newton Highlands
Elmarien (Newton). 9 Forest St.
- 1892 Withington, Alfreda. Pittsfield. 17 Clinton Av.
Bosworth
- 1917 Withington, Paul Richmond. Boston. City Hospital.
- 1904 Wolbach, Simeon Burt.....Boston. 420 Beacon St.
- 1907 Wood, Benjamin Ezra.....Allston (Boston). Office,
Boston. 520 Beacon St.
- 1882 } Wood, Henry Austlin.....Waltham. 751 Main St.
- 1888 }
- 1885 Wood, Leonard.....U. S. Army.
- 1901 Wood, Nathaniel Knight.....Boston. 520 Beacon St.
- 1911 Wood, Nelson Merwin.....Charlestown (Boston).
Office, Boston.
19 Bay State Road.
- 1889 Wood, Norman Perkins...Northfield. Main St.
- 1899 Woodbury, Frank Taylor..Wakefield. 21 Chestnut St.
- 1899 Woodbury, Herbert Elwell. Indianapolis, Ind.
1321 No. Meridian St.
- 1891 Woodbury, William. Rochester. N. Y.
Richardson 32 North Goodman Ave.
- 1907 Woodill, Edith Esty.....Waverley (Belmont).
Lock Box C.
- 1902 Woodruff, Richard Allen..Pittsfield. 73 North St.
- 1899 Woods, Charles Edwin....Lunenburg. Lancaster Av.
- 1879 } Woods, George Lyman. Springfield. 60 Sherman St.
- 1897 }
- 1893 Woodward, Johnson Rufus. Oxford.
- 1882 Woodward, Lemuel Fox...Worcester. 52 Pearl St.
- 1915 Woodward, LeRoy Albert..Worcester. 63 Pleasant St.
- 1877 Woodward, Samuel. Worcester. 58 Pearl St.
Bayard
- 1879 Woodworth, Dwight. Fitchburg. 882 Main St.
Sidney
- 1902 Woodworth, John Dawson. Jamaica Plain (Boston).
Roswell 9 Greenough Av.
- 1883 Worcester, Alfred.....Waltham. 751 Main St.
- 1873 Workman, William. Worcester.
Hunter †1912
- 1901 Wormelle, Charles Burton. Allston (Boston).
186 Brighton Av.
- 1902 Worth, Edward Philip....Edgartown.
- 1904 Worthen, Charles Arthur..Lynn. 32 Mall St.
- 1896 Worthington, Arthur. Dedham. 26 Court St.
Morton
- 1894 Wright, James Homer.....Boston.
Mass. Gen. Hospital.
- 1916 Wright, Willard Lyman...Boston.
510 Commonwealth Av.
- 1910 Wright, William Francis..Fall River. 160 Robeson St.
- 1895 Wylie, Eugene Cushman...Dorchester (Boston).
556 Washington St.
- 1894 Wylie-Cushman, Ella. Boston. 711 Boylston St.
Rosalind
- 1912 Wyman, Edwin Theodore..Boston. 483 Beacon St.

Y

- 1903 Yeaton, George William....Medway. Village St.
- 1897 Yenetchi, Henry. Somerville.
Ainsworth 104 Highland Av.
- 1895 Yoosuf, Abraham Kevork..Worcester.
82 Franklin St.
- 1915 Young, Annie Roberts....Waltham. 925 Main St.
- 1895 Young, Edgar William....Everett. 640 Broadway.
- 1910 Young, Edward. Boston.
Lorraine, Jr. 99 Commonwealth Av.
- 1914 Young, Edward Wallace...New Bedford. 403 Union St.
- 1897 Young, Ernest Boyen....Boston. 434 Marlboro' St.
- 1906 Young, Evangeline Wilson. Boston.
510 Commonwealth Av.
- 1907 Young, James Herbert.....Newton. 19 Baldwin St.
- 1882 Young, John Francis.....Brookline. 1821 Beacon St.
- 1905 Young, Ralph Randal....Roxbury (Boston).
3 Highland St.
- 1905 Young, Roy Demas.....Arlington. 788 Mass. Av.
- 1908 Young, Walter Harding....Dedham. Office, Boston.
39 Newbury St.
- 1899 Young-Slaughter, Emma. Lowell. 100 Westford St.
Elizabeth

Z

- 1888 Zabriskie, Frank Hunter..Greenfield. 426 Main St.
- 1916 Zarrella, Angelo Mario....Lynn. 212 Boston St.
- 1913 Zimmerman, Henry.....Springfield. 721 North St.

Massachusetts Medical Society

LOCAL DIRECTORY

THE FELLOWS LISTED ACCORDING TO THEIR SITUATION
IN THE VARIOUS CITIES, TOWNS AND POST
OFFICES OF THE STATE

JANUARY 1, 1919

LOCAL DIRECTORY

THE FELLOWS LISTED ACCORDING TO THEIR SITUATION IN THE VARIOUS CITIES, TOWNS
AND POST OFFICES OF THE COMMONWEALTH.

NOTE.—Names of District Societies are printed in lower-case Roman. Names of cities are printed in capitals. Names of towns are printed in small capitals. Names of villages and post offices are printed in lower case italics.

ABINGTON (Plymouth).
(See also: North Abington.)
Hutchinson, W. P.
Stevens, W. R.

ACTON (Middlesex North).
(See also: West Acton).

ACUSHNET (Bristol North).

ADAMS (Berkshire).
Boom, A. K.
Crowley, J. F.
Holmes, H. B.
Pascoe, W. W.

ADAWAM (Hampden).
(See also: Feeding Hills.)

ALFORD (Berkshire).

ALLERTON (HULL).
Sturgis, W. H. W.

ALLSTON (Brighton) (BOSTON).

Butler, P. F.
Casey, J. F.
Ely, T. W.
Giddings, H. G.
Haslam, F. A.
Heffernan, D. A.
Lovell, M. E.
Miniter, F. G.
†Moran, J. B.
McKeen, S. F.
Riley, C. A.
Turnbull, J. H.
Webber, W. G.
Wood, B. E.
Wormelle, C. B.

AMESBURY (Essex North).

Biron, J. F. R.
Leslie, H. G.
Mudge, O. P.
Mullen, P. J.
Murphy, D. D.
Rand, J. W.
Savignac, A. N.
Warren, C. F.

AMHERST (Hampshire).
(See also: Cushman, and North
Amherst.)

Bowen, J. F.
Haskell, N. C.
Rawson, G. W.
Rockwell, H. G.
Whitman, L. O.

ANNISQUAM (GLOUCESTER).
Shields, E. E.

ANDOVER (Essex North).

Abbott, C. E.
Conroy, E. C.
Daly, J. J.
Fuller, J. R.

ANDOVER (continued).

Lane, E. D.
Look, P. J.
Walker, W. D.

ARLINGTON (Middlesex South).
(See also: Arlington Heights.)

Atwood, C. F.
Buckley, D. J.
Dennett, C. A.
Easter, E. F.
Keegan, C. A.
Lawley, B. I.
Pratt, Ezekiel.
Sanger, G. E.
Stickney, E. P.
Tolman, Julia
Walsh, C. J.
Webb, H. R.
Young, R. D.

Arlington Heights (ARLINGTON).
Ring, A. H.

ASHBURNHAM (Worcester North).
Bates, C. A.
Fosgate, E. G.

ASHBY (Worcester North).
Pope, F. F.

ASHFIELD (Franklin)

ASHLAND (Middlesex South).
Morse, R. S.

ASSONET (FREETOWN).
Briggs, C. A.

ATHOL (Worcester North).
Bassow, G. J.
Cuddy, J. F.
Dodge, G. F.
Perry, G. L.

ATLANTIC (QUINCY).

Bartlett, F. A.
Bruce, D. A.
Drew, M. E.
Sweeney, M. T.

ATTLEBOROUGH (Bristol North).

Battershall, Jesse W.
†Battershall, Joseph W.
Battershall, M. H. W.
Bolduc, A. G.
Clarke, J. W.
Conro, A. C.
Hewitt, W. O.
Holden, C. S.
Kent, R. P.
Mackie, L. V. G.
Milot, W. F.
Murphy, F. V.
Reese, J. A.
Rounseville, W. E.

AUBURN (Worcester).

Auburndale (NEWTON).

Godfrey, H. W.
Haskell, H. H.
Hutchinson, C. P.
Keever, H. F.
†Porter, F. E.

AVON (Plymouth).
Linfield, E. P.

AYER (Worcester North).
Hopkins, B. H.
Priest, H. B.

Baldwinsville (TEMPLETON).

Arey, H. C.
Arey, J. M.
Page, H. W.
Robie, W. F.
Stick, H. L.

BARNSTABLE (Barnstable).
(See also: Cotuit, Hyannis, Mar-
ton's Mills, Osterville.)
Millikin, C. W.

BARRE (Worcester).
Bates, W. S.
Brown, G. A.

BECKET (Berkshire).
Dearborn, H. H.

BEDFORD (Middlesex North).
Whiton, R. K.

BELCHERTOWN (Hampshire).
Elliot, H. W.

BELLINGHAM (Norfolk).

BELMONT (Middlesex South).
(See also: Waverley.)

†Dow, J. A.
Hanson, W. C.
Hoitt, E. G.
Leavitt, F. C.
Palmer, G. M.
Rogers, M. H.
†Underwood, G. L.

BERLIN (Worcester).

BERNARDSTON (Franklin).
Croft, B. P.
Pierce, W. H.

BEVERLY (Essex South).

Cowles, F. A.
Dexter, Franklin
Hayes, W. F.
Hill, G. J.
Johnson, P. P.
Kline, G. M.
Lawlor, J. F.

BEVERLY (continued).

Odeneal, T. H.
 Phillips, C. H.
 Sears, H. E.
 Shatswell, J. A.
 Stanley, F. G.
 Stickney, G. A.
 Stone, R. E.
 Swan, L. C.
 †Swaser, O. F.

Beverly Farms (BEVERLY).

Murphy, D. F.
 Warren, H. E.

BILLERICA (Middlesex North).

(See also: North Billerica.)
 Alley, E. J.
 Buck, M. A.
 Stearns, A. W.

Blackinton (WILLIAMSTOWN).

Galvin, William

BLACKSTONE (Worcester).

Roche, T. F.

BLANFORD (Hampden).

BOLTON (Worcester).

BOSTON (Suffolk).

(See also: East Boston, South Boston, Allston, Brighton, Charlestown, Dorchester, Forest Hills, Hyde Park, Jamaica Plain, Mattapan, Roslindale, Roxbury, West Roxbury.)

Achorn, R. C.
 Adams, L. D.
 Allen, A. W.
 Allen, Freeman
 Allen, G. W.
 Alcuza, Izak
 Amadon, A. F.
 Ames, J. L.
 Andrews, H. V.
 Appleton, William
 Arkin, Louis
 Arnold, H. D.
 Austin, A. E.
 Ayer, J. B.
 Ayer, S. H.
 Azadian, D. G.
 Badger, G. S. C.
 Baker, D. V.
 Baker, H. W.
 Ballhoni, G. M.
 Balch, F. G.
 Bardwell, F. A.
 Barney, J. D.
 Barney, W. O.
 Barnum, F. G.
 Barone, Joseph
 Barrell, C. S.
 Barron, M. E.
 Barstow, A. T.
 Bartol, J. W.
 Bean, C. P.
 Bearse, Carl
 Beebe, T. C.
 Berry, C. F.
 Bigelow, W. S.
 Binney, Horace
 Bisbee, E. S.
 Blake, C. J.
 Blake, Gerald
 Blake, J. R.

BOSTON (continued).

†Blodgett, A. N.
 Blodgett, J. H.
 †Boardman, W. E.
 Boardman, W. P.
 Boardman, W. S.
 Bonelli, R. P.
 Bossidy, J. C.
 Bottomley, J. T.
 Bowditch, Harold
 Bowditch, H. I.
 Bowditch, V. Y.
 Boweu, J. T.
 Bowman, F. R.
 Brackett, E. G.
 Bradford, E. H.
 Brady, J. F.
 Brant, Austin
 Bremer, J. L.
 Breslin, J. G.
 Brewster, G. W. W.
 Brickley, W. J.
 Briggs, F. M.
 Briggs, J. E.
 Briggs, L. V.
 Brigham, F. G.
 Brindisi, Rocco
 Bristol, DeL. J.
 Brooks, E. M.
 Brooks, W. A.
 Brough, D. D.
 Brown, L. T.
 Brown, Percy
 Brown, W. J.
 Browne, W. E.
 Bruce, J. B.
 Bryant, A. G.
 Bryant, John
 Buck, H. M.
 Bullard, W. N.
 Bunker, S. M.
 Burnham, E. A.
 Burnett, F. L.
 Burns, F. S.
 †Bush, J. S. F.
 Butler, A. E.
 Butler, C. S.
 Butler, P. F.
 Cabot, Hugh
 Cabot, R. C.
 Caines, R. J. R.
 Callanan, F. J.
 Castleman, Philip
 Chadbourne, A. P.
 Chamberlain, M. L.
 Chandler, T. E.
 Chase, H. M.
 Chase, W. G.
 Cheever, David
 Chenery, W. E.
 Christian, H. A.
 Chute, A. L.
 Clap, E. W.
 Clark, G. O.
 Clark, J. P.
 Clark-MacLeod, Emily
 Cliff, L. A.
 Clymer, George
 Cobb, Farrar
 Cobb, F. C.
 Cochrane, R. C.
 Codman, E. A.
 Coffin, R. A.
 Cogan, J. A.
 Colburn, H. H.
 Conant, W. M.
 Coriat, I. H.
 Cotton, F. J.
 Coues, W. P.
 Councilman, W. T.

BOSTON (continued).

Courtney, J. W.
 Cowles, W. L.
 Cox, O. F.
 Cragin, G. A.
 Crandon, L. R. G.
 Crane, Clarence
 Crawford, F. X.
 Crockett, E. A.
 Crosbie, A. H.
 Culbertson, E. V. P. B.
 Cummin, J. W.
 Cummins, L. J.
 Cunningham, A. R.
 Cunningham, J. H., Jr.
 Cushing, H. W.
 Cutler, E. G.
 Cutler, G. D.
 Dadmun, E. J.
 Daland, E. M.
 Daly, W. J.
 Daniels, E. A.
 Davenport, F. H.
 Davis, F. A.
 Davis, Lincoln
 Davis, M. F.
 Dawson, R. P.
 Day, H. F.
 DeBlois, T. A.
 Delano, Samuel
 Denig, E. A.
 Denny, G. P.
 DeNormandie, R. L.
 Derby, F. W.
 Derby, G. S.
 Dewing, L. A.
 Di Mento, V. J.
 Dixon, L. S.
 Dixon, R. B.
 Dodge, A. M.
 Dodge, W. W.
 Donoghue, F. D.
 Dorcey, J. E.
 Dowling, J. J.
 Drury, D. W.
 Duckering, F. W.
 Dunn, C. H.
 Dunn, Wm. Ambrose
 Dwight, E. W.
 Dwyer, W. J.
 Eames, G. F.
 Earle, G. H.
 Easton, E. T.
 Eaton, H. B.
 Edwards, W. L.
 Ehrenfried, Albert
 Ehrlich, Henry
 Elliot, J. W.
 Elliott, R. D.
 Emersou, P. W.
 Emerson, W. R. P.
 English, M. J.
 Erb, T. C.
 Eustis, R. S.
 Evans, Albert
 Everett, E. E.
 Fabyan, Marshal
 Fair, R. P.
 Farlow, J. W.
 Faulkner, W. E.
 Felch, C. I.
 Felch, G. A.
 Felch, L. P.
 Feldman, Aaron
 Finkelstein, Harry
 Flischbein, Louis
 Fitz, G. W.
 Fitz, Reginald
 Fitzgerald, J. B.
 Flagg, Elsha

BOSTON (continued).

Floyd, Cleaveland
 Foley, T. B.
 Frankel, D. I.
 Fraser, A. McK.
 Fraser, Somers
 Friedman, Benjamin
 Friedman, Eli
 Friedman, Nathan
 Frothingham, Channing, Jr.
 Frye, E. B.
 Gallison, J. M.
 Galloupe, C. W.
 Gannett, W. W.
 Garland, G. M.
 George, A. W.
 Germain, H. H.
 Gilman, C. S.
 Gilpatrick, R. H.
 Goddu, L. A. O.
 Golden, Lazarus
 Goldthwait, J. E.
 Goodale, J. L.
 Goodall, H. W.
 Granger, F. B.
 Grant, W. H.
 Graves, W. P.
 Gray, Horace
 Gray, H. B.
 Green, C. M.
 †Green, J. O.
 Green, M. C.
 Green, R. M.
 Greene, D. C., Jr.
 Greene, E. M.
 Greenough, R. B.
 Grogan, M. V.
 Gunter, F. C.
 Haley, W. T.
 Hall, G. W.
 Hall, W. D.
 Hamilton, A. J. A.
 Hamilton, A. L.
 Harding, G. F.
 Hare, C. H.
 Harmer, T. W.
 Harrington, T. F.
 Harrison, C. W.
 Harrison, Henry
 Hartung, H. H.
 Harvey, W. W.
 Haskins, F. E.
 Hawes, J. B., 2nd
 Healy, William
 Hebbard, E. C.
 Heffernan, D. A.
 Hegerty, J. G.
 Henderson, F. F.
 Hepburn, J. J.
 Herman, E. W.
 †Hersey, F. C.
 Hewes, H. F.
 Higgins, F. A.
 Hill, G. S.
 Hill, L. W.
 Hill, T. C.
 Hipkiss, George
 Hitchcock, Edward
 Hodgdon, F. W., Jr.
 Hodgkins, E. M.
 Hogner, R. P. F.
 Hollings, Byam
 Hornor, A. A.
 Houghton, N. H.
 Howard, A. G.
 Howard, C. T.
 Howard, H. H.
 Howard, H. J.
 Howe, O. T.
 Howe, W. C.

BOSTON (continued).

Howland, J. B.
 Hubbard, J. C.
 Hughes, L. A. C.
 Hunt, D. L.
 Huntington, J. L.
 Hurley, J. J.
 Hutchins, H. T.
 Hyde, H. V.
 Hyman, C. H.
 Irving, F. C.
 Irving, H. W.
 Jack, E. E.
 Jack, F. L.
 Jackson, D. L.
 Jackson, Henry
 James, A. P.
 Jelly, A. C.
 Johnson, F. W.
 Jones, D. F.
 Jones, M. S.
 Jordan, E. M.
 Joslin, E. P.
 Katsainos, G. M.
 Keenan, G. F.
 Kelley, E. R.
 Keenan, J. A.
 Kellogg, E. B.
 Kellogg, F. L.
 Kellogg, F. S.
 Kennedy, A. G.
 Kepler, C. O.
 Kerr, I. D.
 Khoury, Kamel
 Kilburn, H. W.
 Kimpton, A. R.
 Kiscock, R. J.
 Knapp, P. C.
 Knowlton, W. M.
 Konrad, F. C. W.
 Lacey, W. H.
 Ladd, Maynard
 Ladd, W. E.
 Lahey, F. H.
 Larrabee, R. C.
 †Lawrence, R. M.
 Lee, H. J.
 Legg, A. T.
 Leland, G. A.
 Leland, G. A., Jr.
 Leland, H. L.
 L'Esperance, O. R. I.
 Levins, N. N.
 Lindquist, C. A.
 Little, J. M., Jr.
 Lloyd, H. D.
 Locke, E. A.
 Loder, H. D.
 Lord, F. T.
 Lorimer, Felix
 Lothrop, H. A.
 Lovett, R. W.
 Lowell, F. L.
 Luce, LeR. A.
 Lund, F. B.
 Lyman, Henry
 MacAusland, A. R.
 MacAusland, W. R.
 MacCallum, W. P.
 McCurdy, T. E. A.
 McDonald, S. J.
 McIntyre, G. F.
 MacIver, G. A.
 MacKnight, W. F.
 McLaughlin, A. J.
 MacLennan, A. D.
 Madden, W. D.
 Magrath, G. B.
 Mahoney, D. F.
 Mahoney, J. L.

BOSTON (continued).

Marble, H. C.
 Marcy, H. O.
 Margeson, R. D.
 Marshall, H. W.
 Martin, J. F.
 Mason, N. R.
 Mead, L. G.
 Means, J. H.
 Medalla, D. B.
 Medallia, L. S.
 Mendelsohn, Louis
 Merrill, A. S.
 Miller, G. F.
 Miller, R. H.
 Minot, G. R.
 Minot, J. J.
 Mintz, S. C.
 Mixer, C. G.
 Mixer, S. J.
 Mixer, W. J.
 Monks, G. H.
 Moore, G. C.
 Moore, J. H.
 Morgan, C. R.
 Morgan, John
 Morong, A. B.
 Morrison, L. B.
 Morrison, W. R.
 Morse, G. W.
 Morse, J. L.
 Mosher, H. P.
 Murphy, F. C.
 Murray, B. F.
 Myers, S. W.
 Myself, Phillip
 New, W. S.
 Newell, F. S.
 †Nichols, A. H.
 Nichols, E. H.
 Nolen, W. F.
 Noyes, M. L.
 Nute, A. J.
 Ober, F. R.
 O'Brien, F. W.
 O'Brien, T. J.
 O'Hare, J. P.
 Oliver, E. L.
 †Oliver, H. K.
 O'Neill, R. F.
 Osgood, H. A.
 Osgood, R. B.
 O'Sullivan, Anna
 Otis, E. O.
 Otis, W. J.
 Ott, G. J.
 Overlander, C. L.
 Packard, A. E.
 Packard, Fabyan
 Packard, Horace
 Page, A. K.
 Page, C. G.
 Paine, A. K.
 Palfrey, F. W.
 Palmer, Ezra
 Palmer, S. E.
 Papas, P. N.
 Parker, W. S.
 Paul, L. G.
 Paul, W. E.
 Pavlo, S. G.
 Payne, J. H.
 Pearl, S. M.
 Pease, E. A.
 Pemberton, F. A.
 Penhallow, D. P.
 Perry, H. J.
 Phaneuf, L. E.
 Phelps, J. S.
 Phipps, Cadis

BOSTON (continued)

Pierce, G. B.
 Pike, W. C.
 Piper, Frank
 Place, E. H.
 Poirier, G. H.
 Pollock, H. M.
 Pond, B. W.
 Pope, E. F.
 Porter, C. A.
 Post, Abner
 Powers, G. H.
 Pratt, J. H.
 Preble, W. E.
 Prince, Morton
 Quackenboss, Alexander
 Quest, J. F.
 Rabe, E. R. E.
 Reardon, T. J.
 Reed, Carlisle
 Reeves, Marcellus
 Reggio, A. W.
 Reynolds, Edward
 Rice, W. H.
 Richards, C. G.
 † Richards, G. F.
 Richardson, A. G.
 Richardson, E. P.
 Richardson, F. L.
 Richardson, Oscar
 Richardson, W. L.
 Riley, Augustus
 Riley, E. A.
 Risley, E. H.
 Robbins, Chandler
 Robbins, E. D.
 Robbins, W. B.
 Robey, W. H., Jr.
 Rogers, A. E.
 Rolfe, W. A.
 Rosen, D. W.
 Rothblatt, H. L.
 Rushmore, Stephen
 Ryder, B. McW.
 Sabine, J. D. K.
 Sadler, R. A.
 Saltz, S. M.
 Sanborn, G. P.
 Sargent, G. A.
 Sawyer, E. K.
 Scannell, D. D.
 Schirmer, J. W.
 Scott, N. McL.
 Scudder, C. L.
 Sears, G. G.
 Sears, H. F.
 Seymour, Malcolm
 Shapira, A. A.
 Shapira, V. I.
 Shattuck, F. C.
 Shattuck, G. R.
 Shattuck, G. C.
 Shaw, Albert J.
 Shaw, Arthur J.
 Sheldon, R. F.
 Shields, W. S.
 Shohan, Joseph
 Simmons, C. C.
 Sisson, W. R.
 Slack, F. H.
 Smith, Conrad
 Smith, C. M.
 Smith, E. W.
 Smith, G. C.
 Smith, G. G.
 Smith, H. H.
 Smith, M. A.
 Smith, P. M.
 Smith, R. M.
 Smith-Petersen, M. X.

BOSTON (continued).

Sobotky, Irving
 Soutter, Robert
 Sowles, H. K.
 Spaulding, J. D.
 Spinney, F. I.
 Sprague, F. P.
 Sprague, R. B.
 Stacey, C. F.
 Stack, J. J.
 Standish, Myles
 Stedman, George
 Steffen, E. E.
 Stone, E. G.
 Stone, J. S.
 Storer, Malcolm
 Streeter, E. C.
 Strong, R. P.
 Sullivan, C. B.
 Sumner, P. S.
 Supple, E. A.
 Swain, H. T.
 Swift, E. H.
 Swift, J. B., Jr.
 Swift, W. B.
 Talbot, F. B.
 Taylor, E. W.
 Temple, W. F.
 Temple, W. F., Jr.
 Tenney, Benjamin
 Tenney, J. A.
 Thomas, J. J.
 Thompson, C. O.
 Thompson, P. H.
 Thorndike, Augustus
 Thorndike, Paul
 Thorndike, T. W.
 Thornton, J. B.
 Tingley, L. P.
 Titus, R. S.
 Tobey, G. L., Jr.
 Tobey, H. G.
 Torbert, J. R.
 Towle, H. P.
 Townsend, C. W.
 Traves, W. H.
 † Trull, W. B.
 Twombly, E. L.
 Tyrode, M. P. O. V.
 Van de Velde, Honoré
 Verhoeff, F. H.
 Victor, A. C.
 Vincent, Beth
 Vose, R. H.
 Wadsworth, R. G.
 Walker, D. H.
 Walker, I. J.
 Walsh, E. F.
 Walton, G. L.
 Wardwell, J. K.
 Warren, John
 Warren, J. Collins
 Washburn, F. A.
 Washburn, G. H.
 Waterman, G. H.
 Watson, F. S.
 Webster, G. A.
 Wells, Frank
 Wentworth, A. H.
 Wheel, H. R.
 Whipple, F. H.
 White, C. J.
 White, F. W.
 Whitney, C. M.
 Whitney, W. F.
 Whittemore, Wyman
 Wickham, T. W.
 Wilcox, DeW. G.
 Wilmsky, C. F.
 Williams, D. L.

BOSTON (continued).

Williams, F. H.
 Williams, Harold
 Williams, H. C.
 Williams, Hugh
 Williams, J. T.
 Wilson, E. W.
 Winslow, Frederick
 Withington, P. R.
 Wolbach, S. B.
 Wood, N. K.
 Wright, J. H.
 Wright, W. L.
 Wylie-Cushman, E. R.
 Wyman, E. T.
 Young, E. L., Jr.
 Young, E. B.
 Young, E. W.

BOURNE (Barnstable).

(See also: Sagamore.)

BOXBOROUGH (Middlesex North).

BOXFORD (Essex North).

BOYLSTON (Worcester).

Bradford (HAVERHILL).

Anthony, F. W.
 Atwood, G. M.
 Brainerd, W. S.
 George, L. H.
 LeGro, L. B.
 Littlefield, M. C.
 O'Toole, J. L.

BRAINTREE (Norfolk South).

(See also: East and South Braintree.)

Cook, J. H.
 Gile, F. H., Jr.
 Gould, C. H.
 Ripley, H. W.

BREWSTER (Barnstable).

Crocker, L. A.

BRIDGEWATER (Plymouth).

(See also: East Bridgewater and State Farm.)

Carr, A. W.
 Hunt, A. F.
 Hunt, W. E.
 † Pratt, Calvin
 Warren, F. L.
 Whelan, E. V.

Brighton (Middlesex South.)

(BOSTON).

(See also: Allston.)

Broderick, T. F.
 Buckley, W. S.
 Budreski, A. F.
 Crosby, W. H.
 Doherty, F. J.
 Gwinnell, A. W.
 Larrabee, F. W.
 Moore, M. T. V.
 O'Brien, E. J.
 Rice, F. W.
 Ripley, W. L.
 Rowen, H. S.
 Stanton, Joseph
 Tinkham, O. G.
 Willey, W. B., Jr.

BRIMFIELD (Hampden.)

Sawin, R. V.

BROCKTON (Plymouth).

(See also: Campello.)

Alfred, James
 Bacon, J. E.

BROCKTON (continued).

Barrett, M. F.
Beals, A. L.
Boucher, G. A.
Brady, J. E.
Brides, A. E.
Buckley, G. A.
Burnett, F. H.
Butler, D. M.
Callahan, J. F.
Chase, H. A.
†Clark, E. W.
Cloudman, H. R.
Condric, J. J.
Constans, F. E.
Dacy, C. J.
Drohan, J. H.
Ducy, W. D.
Fullerton, W. W.
Ginsburg, N. H.
Goddard, S. W.
†Gruver, S. J.
Kandib, A. H.
Keith, W. C.
Lawrence, J. H.
Leavitt, P. H.
LeMay, A. M.
Lupien, H. J.
McCann, C. D.
McCarthy, T. H.
McNamara, J. J.
Miles, C. G.
Millet, C. S.
Moore, G. A.
Murdock, F. W.
Noyes, J. R.
Packard, L. B.
Paine, A. E.
Pettey, J. A.
Ripley, F. J.
†Robinson, L. M.
Safford, W. P.
Shaw, J. P.
Simmons, F. A.
Smith, A. C.
Sullivan, A. J.
Tuholski, D. B.

BROOKFIELD (Worcester).

Newhall, L. T.
Sherman, M. H.

BROOKLINE (Norfolk).

(See also: Waban.)

Adams, J. D.
Adams, Z. B.
Ball, J. W.
Barnes, H. A.
Blakely, D. N.
Blanchard, B. S.
Borden, C. R. C.
Boutwell, H. K.
Bowker, E. M.
Brainerd, J. B.
Brigham, E. H.
Bufford, J. H.
Bulfinch, G. G.
†Call, Norman
Casselberry, C. M.
Channing, Walter
Chase, H. L.
Cohen, J. P.
Connelly, J. E.
Coolidge, Algernon
Cooper, Almon
Cornwall, A. P.
Crabtree, E. G.
Cushing, A. A.

BROOKLINE (continued).

Cushing, Harvey
Dalton, C. H.
Dana, H. W.
Deal, E. E.
Denny, F. P.
Dewis, J. W.
Dreyfus, E. W.
Emerson, F. P.
Fairbanks, A. W.
Fallon, J. F.
Fay, W. E.
Francis, C. S.
Francis, G. H.
Freedman, L. M.
Gilbert, L. W.
Good, F. L.
Graham, Douglas
Haines, Ignatius
Hartwell, H. F.
Hassman, D. M.
Hastings, R. W.
Hatch, R. A.
Hayes, F. L.
Heydemann, Martin
†Hills, W. B.
Hinckley, J. W.
Hixon, E. C.
Homans, John
†Hood, M. G.
Howard, A. A.
Hurvitz, A. J.
Ingils, H. J.
Ingraham, L. V.
Jantzeu, F. T.
Jones, Everett
Jones, F. E.
Jones, J. C.
Kaan, G. W.
Kennealy, J. H.
Kickham, C. J.
Lancaster, W. B.
Lawrence, C. H., Jr.
Lee, W. T.
Liebman, William
Litchfield, W. H.
Lyle, E. B.
Mackie, W. C.
McDonald, W. J.
McLaughlin, H. V.
McMahon, F. J.
Mallory, F. B.
Moir, M. W.
Nissen, H. A.
Parker, F. D.
Parris, R. O.
Patten, S. K.
Pearce, A. C.
Percy, K. G.
Powers, H. H.
†Purvis, C. B.
Quinby, W. C.
Reynolds, H. V.
Rogers, E. A.
Rosenau, M. J.
Sabine, G. K.
Saunders, E. L.
Shanahan, T. J.
Sibley, B. E.
Smith, W. H.
Smyth, D. C.
Smyth, P. S.
Spalding, F. M.
Spear, L. M.
Stedman, H. R.
Sylvester, C. P.
Toohey, T. V.
Torney, G. H.
Vickery, H. F.
Walker, I. C.
†Webber, S. G.

BROOKLINE (continued).

Whittier, F. F.
Williams, A. G.
Williams, F. H.
Williams, F. P.
Young, J. F.

BRYANTVILLE (L'EMBOKE).

Charles, O. W.

BUCKLAND (Franklin).

BURLINGTON (Middlesex East).

CAMBRIDGE (Middlesex South).

(See also: East Cambridge.)

Adams, C. W.
Andrews, R. E.
August, Albert
Bacon, N. S.
Bailey, M. H.
Barnes, F. J.
Boyle, J. J.
Brassil, T. F.
Bresnahan, F. N.
Brousseau, W. G.
Bryant, L. L.
Bucholz, C. H.
Buehler, G. V. B.
Burke, W. H., Jr.
Butler, E. J.
Cady, F. B. M.
Cabill, C. S.
Call, E. L.
Cannon, W. B.
Chalfen, S. E.
Clarke, Genevieve
Clarke, I. L.
Cleary, James
Cogswell, G. P.
Cronin, H. J.
Cunningham, J. H.
Cunningham, T. E., Jr.
Darling, E. A.
Davis, B. D.
Dearborn, G. V. N.
Donahue, W. F.
Dow, D. C.
Downing, A. F.
Dudley, A. W.
Dunham, A. F.
Dwyer, J. E.
Dwyer, J. E., Jr.
†Ela, Walter
Feeley, C. P.
Feeley, W. C.
Finnigan, P. J.
Fleet, W. E.
Fleming, P. J.
Foster, C. C.
Gardner, H. M.
Garrick, N. H.
Goodridge, F. J.
Greene, J. A.
Hapgood, L. S.
Heaton, T. H.
Hopkinson, George
Hutchinson, C. M.
Jouett, F. R.
Kelleher, P. F.
Kennelly, J. G.
King, M. L.
LaMarche, W. J.
Lancaster, S. R.
Lee, R. I.
Leith, R. B.
Lockhart, J. S.
MacKillop, Daniel

CAMBRIDGE (continued).

Mackechnie, A. N.
 Marvin, F. W.
 McAdams, P. S.
 McCarthy, E. A.
 McGirr, F. F.
 McIntire, H. B.
 McKenzie, J. R.
 Mernin, M. T.
 Murphy, J. J.
 Myles, L. T.
 Nelligan, J. P.
 Nelson, C. A.
 Noonan, W. A.
 Norris, A. P.
 Norton, G. E.
 O'Rourke, E. J.
 Page, G. T.
 Partridge, T. J.
 Peirce, B. H.
 Potter, A. C.
 Preble, Wallace
 Putnam, W. A.
 Rice, F. F.
 Richards, C. M.
 Robb, Hunter
 Robertson, J. W.
 Rockwell, J. A., Jr.
 Rose, W. M.
 Ross, Elizabeth
 Seavy, H. L.
 Sennott, J. R.
 Sever, J. W.
 Shannon, N. V.
 Smith, J. H.
 Smith, J. J.
 Southard, E. E.
 Southard, M. A.
 Stevens, E. H.
 Stevens, H. P.
 Sullivan, F. A.
 Swaim, L. T.
 Swan, W. D.
 Taylor, F. W.
 Thomas, C. H.
 Thomas, W. K. S.
 Thompson, J. S.
 Trainor, J. A.
 Tryon, Geneva
 Tuttle, A. H.
 Verde, Luigi
 Wadden, J. M.
 Walcott, H. P.
 Wells, C. E.
 Wetherbee, Roswell
 White, G. A.
 Whittemore, W. S.
 Whoriskey, J. J.
 Williams, E. R.
 Williams, F. E.

Campello (BROCKTON).

†Averill, J. H.
 Caswell, W. E.
 Frost, E. C.
 Holmberg, C. L. M.
 King, N. C.

CANTON (Norfolk).

Daniels, O. G.
 Fish, J. E.
 Hinton, W. A.
 Kemp, L. S.
 Luce, D. S.
 MacPherson, W. E.
 Tenney, W. N.

CARLISLE (Middlesex North).

CARVER (Plymouth).

CHARLEMONT (Franklin).

Charlestown (Middlesex South).
(BOSTON).

Duff, John
 Duff, John, Jr.
 Fitzpatrick, J. J.
 Flagg, H. H.
 Grandison, W. G.
 Hammond, W. P.
 Hurley, D. J.
 Lyons, J. B.
 Magurn, F. T. L.
 McDermott, J. E.
 McNally, W. J.
 Morris, M. A.
 O'Brien, J. F.
 Patterson, W. F.
 Plummer, E. M.
 Silva, F. P.
 Sprague, R. W.
 Wood, N. M.

CHARLTON (Worcester).

CHATHAM (Barnstable).

CHELMSFORD (Middlesex North).
(See also: North Chelmsford.)
Howard, Amasa
Schorbia, A. G.

CHELSEA (Suffolk).

Aaronson, Jacob
 Crittenden, S. W.
 Cutler, C. N.
 Davidson, Alfred
 Fenwick, G. B.
 Garrett, F. S.
 Guild, E. F.
 Klein, Armin
 McClintock, F. B.
 Meyers, H. B.
 Nason, O. C. B.
 Nigro, Michele
 †Putnam, J. M.
 Raddin, F. S.

CHESHIRE (Berkshire).

CHESTER (Hampden).
Lanpher, H. A.

CHESTERFIELD (Hampshire).

Chestnut Hill (BROOKLINE)
Johnson, M. W. L.

Chestnut Hill (NEWTON).

Baldwin, H. T.
 Briggs, E. C.
 Curtis, F. G.
 Gay, G. W.

CHICOPEE (Hampden).

(See also: Chicopee Falls, Williamsett.)
 Gallagher, J. H. C.

Chicopee Falls (CHICOPEE).

Beauchamp, J. O.
 Dutton, F. K.
 †Gibbs, L. J.
 Mannix, L. E.
 Shea, M. I.

CHILMARK (Bristol South).

CLARKSBURG (Berkshire).

Cliftondale (SAUGUS).

Danforth, H. A.
 Harris, L. W.
 Penny, H. T.
 Penny, M. M.

CLINTON (Worcester).

Abbott, C. R.
 Bowers, W. P.
 Chase, G. L.
 French, C. L.
 Goodwin, J. J.
 Grady, P. A. S.
 Grady, T. H.
 Mackay, E. H.
 Monahan, J. A.
 Morse, I. M.
 Tobey, G. L.

Cochituate (FRAMINGHAM).
Sparks, E. E.COHASSET (Norfolk South).
Hinchliffe, Frederick
Howe, O. H.
Osgood, GeorgeCOLRAIN (Franklin).
Cram, J. W.
Mather, J. A.CONCORD (Middlesex South).
(See also: Concord Junction.)
Cheney, F. E.
†Emerson, E. W.
Lord, S. A.
Titcomb, G. E.
Walcott, H. J.
Wentworth, M. H.Concord Junction (CONCORD).
Fernald, G. G.

CONWAY (Franklin).

Cotuit (BARNSTABLE).
Haskins, S. F.CUMMINGTON (Hampshire).
†Stutson, W. P.Cushman (AMHERST).
Fuller, A. H.DALTON (Berkshire).
MacKay, G. F.
Schofield, W. W.
Sullivan, P. J.

DANA (Worcester).

DANVERS (Essex South).
 (See also: Hathorne.)
 Baldwin, F. W.
 Buck, C. L.
 Deering, C. F.
 Mains, H. L.
 Marsh, A. P.
 Moriarty, J. J.
 Niles, E. H.
 Sparhawk, C. W.

DARTMOUTH (Bristol South).
(See also: South Dartmouth.)

DEDHAM (Norfolk).
 (See also: East Dedham.)
 Batchelder, H. G.
 Finn, E. W.
 Hodgdon, A. H.
 Pratt, J. W.
 Worthington, A. M.
 Young, W. H.

DEERFIELD (Franklin).

(See also: South Deerfield.)
Thorn, E. C.

DENNIS (Barnstable).

(See also: Dennisport, South and
West Dennis.)

Dennisport (DENNIS).

Ginn, D. R.

DIGHTON (Bristol North).

Baker, H. B.

Dorchester (Norfolk) (BOSTON).

(See also: Mattapan and Nepon-
set).

Abbe, F. R.
Adams, H. W.
Allard, C. E.
Bailey, F. J.
Barker, W. W.
Batchelder, W. B.
Berlin, M. G.
Berman, M. I.
Bliss, G. D.
Bogan, F. L.
Brayton, R. W.
Brearton, E. J.
Brown, F. B.
Butler, J. E.
Carroll, C. C.
Carruth, S. S.
Cavanagh, C. R.
Ceconi, J. A.
Churchill, A. Q.
Coffin, A. B.
Costello, J. H.
Croke, L. W.
Crowell, Samuel
Curran, S. F.
Davis, W. H.
Davison, A. H.
Day, E. P.
Dervin, P. J.
Devenny, J. H.
Dewey, C. G.
Dexter, R. B.
Dobson, W. M.
Draper, A. L.
Drummev, N. D.
Duckering, W. W.
Eldridge, D. G.
Emerson, F. L.
Emery, W. C.
Evans, M. H. A., Jr.
Faxon, E. W.
Fennessey, J. F.
Ferguson, E. H.
Foster, A. N.
Gaetani, A. L.
Giblin, F. J.
Golub, J. J.
Gookin, E. R.
Gordon, S. F.
Graves, B. A.
Hallisey, J. E.
Hammond, W. J.
Hardwick, E. V.
Hartnett, E. H. L.
Harrington, D. J.
Harrington, H. L.
Hawkins, Henry
Hemeon, F. C.
Ingoldsby, J. E.
Johnston, William
Kelley, J. H. H.
Kelly, J. M.
Kent, Bradford
Lane, J. W.
Levine, H. B.

Dorchester (continued).

Loewe, W. R.
Macaulay, J. A.
Macdonald, A. A.
McCartin, J. E.
McEvoy, G. A.
McQuade, L. S.
Mahoney, F. X.
Mains, C. F.
Mausfield, J. A.
Marr, M. W.
Martin, D. L.
Mason, G. M.
May, J. V.
Merrick, R. M.
Miller, C. H.
Morrison, Hyman
Murray, P. J.
Myrick, H. G.
Norton, H. R.
Nute, Marion
O'Brien, J. J.
Parker, W. H.
Parsons, F. S.
Parvey, Benjamin
Phillips, W. F.
Regan, J. J.
Reilly, J. A.
Roberts, L. A.
Rogers, O. F.
Rogers, O. F., Jr.
Rood, L. C.
Scales, R. B.
Scanlan, T. J.
Schmidt, R. D.
Sheppard, P. A. E.
Sherburne, A. E.
Sleeper, F. W.
Starbird, E. P.
†Stevens, G. B.
Stone, H. E.
Sturnick, Max
Sullivan, J. J.
Sullivan, J. T.
Tennis, M. N.
Thurber, M. T.
Towle, H. C.
Tracy, E. A.
Treatnor, J. P.
Twitchell, E. T.
Walton, W. J.
Watson, F. G.
Watts, H. F. R.
White, P. D.
Williams, Joseph
Wylie, E. C.

DOUGLAS (Worcester).**DOVER (Norfolk).**

Emmons, A. B., 2nd.

DRACUT (Middlesex North).**DUDLEY (Worcester).****DUNSTABLE (Middlesex North).****DUXBURY (Plymouth).**

†Durgin, S. H. (Millbrook P. O.)
Noyes, N. K.
Spalding, Roger

East Boston (BOSTON).

Bonney, Robert
Bowen, E. E.
Bragdon, H. E.
Ensworth, W. H.
†Grainger, W. H.

East Boston (continued).

Guralnick, Rubin
Hartnett, E. D.
Houghton, R. H.
Hurley, D. B.
Morrison, W. A.
Myers, Solomon
Papen, G. W.
Schwartz, G. H.
Segan-Roitman, Jennie
Sisson, Mitchell
Tallman, A. L.
Taylor, J. D.
Tilton, F. H.

East Braintree (BRAINTREE).

Record, H. R.

East Bridgewater (BRIDGEWATER)

Bannerman, W. B.

East Cambridge (CAMBRIDGE).

Clancy, W. H.
Fair, J. F.

East Dedham (DEDHAM).

Drew, F. P.

East Gardner (GARDNER).

Thompson, C. E.

East Gloucester (GLOUCESTER).

Parmenter, D. C.

EASTHAM (Barnstable).**EASTHAMPTON (Hampshire).**

Burke, J. J.
Cobb, O. W.
Hiltbold, Werner
Pond, L. B.
Williams, E. D.
Winslow, E. S.

East Longmeadow (LONOMEADOW).

Curtis, H. F.

East Norfolk (NORFOLK).

Moore, F. P.
Neff, I. H.

EASTON (Bristol North).

(See also: North Easton.)

East Taunton (TAUNTON).

Adams, W. C.

East Walpole (WALPOLE).

Vivian, W. J.

East Weymouth (WEYMOUTH).

Doucett, F. L.
Fraser, J. C.
Libby, J. H.

EDGARTOWN (Bristol South).

Worth, E. P.

EGREMONT (Berkshire).**ENFIELD (Hampshire).**

Segur, W. B.

ERVING (Franklin).

Johnson, F. E.

ESSEX (Essex South).

Steeves, E. C.

EVERETT (Middlesex South).

Bass, Harris
Bruce, J. A.
Conroy, P. J.
Cornish, S. W.
Hanson, W. G.
Harrington, C. W.
Howe, W. L.
Jackson, A. A.
Keaney, H. J.
McAllester, R. W.
McQuaid, T. B.
Morris, R. H.
Niles, J. O. G.
Rogers, F. A.
Whitehill, G. E.
Young, E. W.

FAIRHAVEN (Bristol South).
Horne, L. W.

FALL RIVER (Bristol South).

Abbe, A. J.
Almy, Thomas
Barnes, F. R.
Barré, J. A.
Blanchette, W. H.
Blood, G. W.
Bright, J. C.
Brown, R. F.
Buck, A. W.
Butler, G. E.
Butler, R. B.
Chace, F. A.
Cone, D. E.
Connell, A. I.
Creamer, W. H.
Crispo, P. T.
Curry, E. F.
Dolan, W. A.
Fennelly, D. J.
French, R. W.
Gifford, J. H.
†Gilbert, John
Gordon, S. M.
Gunning, T. F.
Herbert, Edward
Hicks, G. H.
Jackson, O. H.
Jackson, R. W.
Kerrigan, J. J.
King, G. C.
LaLiberté, E. J.
Learned, W. T.
Lewis, A. C.

Lindsey, J. H.
Lowney, J. F.
MacKnight, A. S.
Macrae, A. C.
Marvell, M. W.
McCarthy, E. A.
Merritt, S. V.
Normand, J. N.
O'Brien, J. F.
Partington, C. B.
Pritchard, W. P.
Richards, G. L.
Ryder, D. R.
Sandler, Samuel
Simmons, R. H.
Stansfield, C. W.
Sullivan, L. J.
Sundelöff, E. M. E.
Syman, W. E.
Trahnor, J. B.
Truesdale, P. E.
Wardle, Henry
Warren, T. F.
Wilbur, H. G.
Wright, W. F.

FALMOUTH (Barnstable).
(See also: Waquoit and West
Falmouth.)
Tripp, E. P.Feeding Hills (AGAWAM).
†Hastings, J. W.Fisherville (GRAFTON).
Charbonneau, N. N.Fiskdale (STURBRIDGE).
†Rice, A. B.

FITCHBURG (Worcester North).

Baker, L. F.
Barton, J. A.
Burus, R. F.
Carey, B. W.
Chandler, C. L.
Church, C. H.
Donovan, T. R.
Finnigan, P. A.
Fish, Louis
Fiske, E. L.
Fregeau, A. N.
Gay, C. B.
Jacques, Hector
Jennings, C. H.
Jones, R. C.
Kearney, J. H.
Killelea, E. V.
Lane, C. R.
Lowell, A. P.
McMurray, F. M.
Mason, A. P.
Miller, E. P.
Morgner, R. A.
Norton, G. P.
O'Malley, E. F.
Quessey, A. H.
Itice, R. A.
Rodrick, A. F.
Sawyer, W. F.
Stimson, J. W.
Thompson, E. H.
Thompson, F. H., Jr.
Tully, E. J.
Woodworth, D. S.

Florence (NORTHAMPTON).
Taylor, Walter

FLORIDA (Berkshire).

Forest Hills (Norfolk) (BOSTON).
Prescott, W. H.

FOXBOROUGH (Norfolk).

Bragg, F. A.
Crocker, B. P.
Kenworthy, M. E.

FRAMINGHAM (Middlesex South).
(See also: Cochituate, Framing-
ham Center, Saxonville.)

Armstrong, D. B.
Baldwin, S. O.
Benner, H. O.
Bodwell, W. M.
Dodd, J. E.
Flett, P. McN.
Glass, James
Harriman, C. E.
Healy, D. L.
Jessaman, L. W.
Morrow, W. R.
Owen, A. S.
Palmer, L. M.
Potter, F. W.

FRAMINGHAM (continued).

Potter, J. C.
St. Clair, A. E.
Spaulding, E. R.
Sullivan, E. A.

Framingham Center (FRAMINGHAM).

Bigelow, E. H.
Stone, A. K.

FRANKLIN (Norfolk).

†Faxon, E. M.
Gallison, A. J.

FREETOWN (Bristol North).
(See also: Assonet).

GARDNER (Worcester North).

(See also: East Gardner.)

Andrews, Oren
Bailey, C. H.
Bone, H. D.
Ellam, H. W.
†Greenleaf, J. R.
Heininger, A. G.
Jewett, E. P.
Lachance, A. P.
Lowell, A. F.
Lundwall, L. S. B.
McClintock, Elsie
Paine, H. L.
Sawyer, E. A.
Smith, W. D.
Waters, J. E.

GAY HEAD (Bristol South).

GEORGETOWN (Essex North).

Holmes, H. F.
Hoyt, E. M.
Root, R. B.
†Root, R. R.

GILL (Franklin).

GLOUCESTER (Essex South).

(See also: Annisquam and East Gloucester).

Burnham, Parker
Carvell, Sanford
Choate, H. H.
Cook, S. P. F.
Egan, J. J.

†Garland, A. S.

Garland, Roy
Hallett, E. R.
Hubbard, E. D.
Knowles, J. H.
Moore, P. P.
Moorling, S. W.
Morrow, C. H.
Proctor, P. C.
Rowley, P. W.
Rowley, William
Shinn, P. A.
Torrey, A. S.

GOSHEN (Hampshire).

GOSNOLD (Bristol North).

GRANBY (Hampshire).

GRAFTON (Worcester).
(See also: Fisherville and North
Grafton.)

Guild, F. W.

GRANVILLE (Hampden).

White, C. A.

GREAT BARRINGTON (Berkshire).
(See also: Housatonic.)

Chapin, C. S.
Kennedy, E. A.
Parks, S. H.

GREENFIELD (Franklin).

Best, E. G.
Canedy, C. F.
Clark, W. K.
Ellis, A. H.
Greenough, C. M.
Howe, H. N.
Johnson, A. E., Jr.
Kemp, H. M.
McConnell, D. J.
Millet, F. A.
O'Brien, J. C.
Stetson, H. G.
Twitchell, G. P.
Zabriskie, F. H.

GREENWICH (Hampshire).

GROTON (Middlesex North).

Kilbourn, A. G.

GROVELAND (Essex North).

Bagnall, E. S.

HADLEY (Hampshire).

Johnson, H. L.
Smith, F. H.

HALIFAX (Plymouth).

HAMILTON (Essex South).

(See also: South Hamilton.)
Corcoran, J. G.

HAMPDEN (Hampden).

HANCOCK (Berkshire).

HANOVER (Plymouth).

Hammond, Charles
†MacMillan, A. L.

HANSON (Plymouth).

HARDWICK (Worcester).

HARVARD (Worcester).

Royal, H. B.

HARWICH (Barnstable).

(See also: West Harwich.)
Handy, H. D.
Miller, F. F.

Hathorne (Danvers).

Bryau, W. A.
Chronquest, A. P.
Macdonald, J. B.
Patterson, A. M.
Stevenson, E. A.
Trueman, N. G.

HATFIELD (Hampshire).

†Barton, C. M.
Bonnevill, A. J.
Byrne, C. A.

HAYERHILL (Essex North).

(See also: Bradford.)
Armitage, H. G.
Beuson, C. S.
Bryant, J. E.
Capeles, T. F.
Carden, C. J.
Chaput, L. R.
†Chase, I. E.

HAYERHILL (continued).

Clarke, I. J.
Coffin, F. H.
Cogswell, William
Conner, H. L.
Coon, W. H.
Cooney, M. B.
Cotter, T. F.
Croston, J. F.
Donahue, Hugh
Dunn, C. S.
Durant, C. E.
Ferrin, W. W.
Fitzgerald, J. J.
Garbelnick, D. A.
George, A. P.
Holbrook, C. A.
Holden, W. D.
Hubbell, A. M.
Kelleher, J. E.
Laskey, E. P.
Macdougall, Duncan
McFee, W. D.
McLaughlin, A. O.
Mindlin, Carl
Morris, A. S.
Mysel, H. A.
Nettle, Paul
Perkins, H. B.
Pierce, F. B.
Pitcher, H. F.
Popoff, Constantine
Robinson, W. P.
Ruel, J. A.
Sproull, John
Still, C. W.
Stokes, L. T.
Stone, T. N.
Sullivan, F. A.
Symonds, A. G.
Trull, A. C.
Whitney, G. B.
Whitten, G. E.

HAWLEY (Franklin).

Haydenville (WILLIAMSBURG).

Perry, C. E.
Wheeler, C. H.

HEATH (Franklin).

HINCHAM (Norfolk South).

Cobb, G. N.
Day, C. O.
Dorr, C. A.
Morse, A. G.
Peterson, J. A.
Spoooner, L. H.
Whelan, Charles

HINSDALE (Berkshire).

HOLBROOK (Norfolk South).

Cole, A. J.
Crawford, F. W.

HOLDEN (Worcester).

Stickney, C. W.
Washburn, F. H.

HOLLAND (Hampden).

HOLLISTON (Middlesex South).

HOLYOKE (Hampden).

†Allen, C. A.
Allen, F. H.
Bagg, E. P., Jr.
Bauman, J. L.

HOLYOKE (continued).

Bkelow, J. B.
Bliss, J. L.
Bouvier, C. W.
Brady, W. F.
Brindamour, J. E.
Carroll, J. J.
Cavanaugh, T. E.
Celce, F. F.
Celce, J. H.
Clark, G. H.
Clarke, L. H.
Cleary, R. E.
Cox, S. C.
Davis, E. M.
Dickson, R. E.
Donoghue, D. F.
Farr, I. H.
Forster, J. F.
Franz, Adolph
Gabler, G. L.
Greaney, W. F.
Hland, E. P.
Henderson, G. D.
Holyoke, Frank
Hubbard, J. C.
Hughes, John
Hunt, A. E. P.
Hunt, G. E.
Hurley, P. E.
Hussey, E. J.
Kilburn, I. N.
Kinne, G. L.
Knowlton, E. A.
Mahoney, S. A.
McCabe, J. J.
Monty, A. H.
Morrison, R. F.
Potts, J. H.
Powers, W. J.
Rosenbloom, C. W.
Ryan, W. P.
Shine, H. K.
Sullivan, E. F.
Taylor, G. L.
Warren, E. D.
Wetherell, A. B.

HOPEDALE (Worcester).

HOPKINTON (Middlesex South).

Playse, L. F.

Housatonic (GREAT BARRINGTON)

Jones, W. W.
Luchsinger, H. W.

HUBBARDSTON (Worcester).

Knowlton, W. T.

HUDSON (Middlesex South).

Breen, J. H.
Hunter, N. McL.

HULL (Norfolk South).

(See also: Allerton.)

HUNTINGTON (Hampshire).

Mace, C. H.

Hyannis (BARNSTABLE).

Binford, F. A.
Chase, H. B.
Harris, C. E.
Hawes, E. E.

Hyde Park (Norfolk) (BOSTON).

Baxter, E. H.
Bennett, W. H.
Bryant, C. E.
Carr, P. W.

Hyde Park (continued).

Cullen, C. A.
Ellis, E. K.
O'Connor, J. H.
Stack, C. F.

Indian Orchard (SPRINGFIELD).

Harrington, M. W.
Riordan, A. H.
†Smith, S. F.

IPSWICH (Essex South).

Bailey, G. G.
MacArthur, G. E.
McGinley, M. C.

Jamaica Plain (Norfolk) (BOSTON).

Anderson, V. V.
Berry, W. C.
Bigelow, A. H.
Bond, S. A.
Broderick, F. P.
†Broidrick, J. P.
Broughton, A. N.
Broughton, H. W.
Burrage, W. L.
Callahan, H. A.
Chadwell, O. R.
Collier, L. H. G.
Cowles, W. N.
Dane, John
Dole, K. L.
Emerson, N. W.
Emmons, H. M.
Ernst, H. C.
Faunce, C. B., Jr.
Fitz-Simmons, H. J.
Holland, H. T.
Howland, G. L.
Johnstone, W. J.
Lane, E. B.
Leard, J. S. H.
Leary, O. C.
Leary, Timothy
McCready, L. T.
McKenna, F. P.
McMann, W. H.
Malone, Charles
Murphy, H. A.
O'Brien, W. J. L.
O'Keefe, D. T.
Ordway, M. D.
Perry, A. P.
Reid, I. E. R.
Richardson, M. W.
Robinson, W. H.
Rollins, E. T.
Safford, M. V.
Solomon, H. C.
Vickery, L. F.
Woodworth, J. D. R.

KINGSTON (Plymouth).

Holmes, A. B.

LAKEVILLE (Bristol North)

Glidden, E. W., Jr.

LANCASTER (Worcester).

Beckley, C. C.

LANESBOROUGH (Berkshire).

Barnes, L. D.

LAWRENCE (Essex North).

Adamian, H. G.
Allen, G. S.
Rain, J. B.

LAWRENCE (continued).

Bannon, J. H.
Bartley, J. J.
Beely, L. G.
Berr, A. W.
Bier, M. D.
Birmingham, R. M.
Burgess, C. J.
Burnham, J. F.
Busbold, F. G.
Calitri, Constant
Chesley, A. E.
Cody, P. W.
Conlon, F. A.
Crandall, W. M.
Cregg, F. A.
Cyr, E. E.
Daly, T. J.
Deacy, J. J.
Dorgan, J. A.
Dorion, Kinton
Dow, G. W.
Eldam, C. H.
Forster, R. W.
Fuller, E. P.
Garbelnick, D. A.
Grant, W. V.
Hilton, J. J. H.
Hogan, J. A.
Howard, J. F.
Joyce, T. F.
Kaplovitch, Henry
Kurth, G. E.
Lawlor, E. F.
Lemieux, T. A.
Levek, J. A.
Manabau, H. W.
Massé, J. B.
McArdle, J. J.
McGauran, M. S.
McKallagat, P. L.
Merrill, W. H.
Moockel, C. R.
Murphy, T. W.
Nevers, H. H.
Oeser, P. R.
O'Reilly, F. A.
O'Sullivan, J. J.
Redmond, T. H.
Riordan, W. D.
Sargent, G. B.
Sargent, O. F. L.
Scanlon, J. M.
Searito, N. J.
Schwartz, Myer
Simon, A. L.
Sinclitico, Giuseppe
Siskind, A. L.
Sullivan, J. J.
Sullivan, M. F.
Sullivan, W. J.
Tiani, Bernardo
Uniac, T. V.
Walch, J. F.

LEE (Berkshire).

Markham, E. W.

LEICESTER (Worcester).

(See also: Rochdale.)
McNelsh, Alexander

LENEX (Berkshire).

Carroll, M. J.
Jaques, H. P.

LEOMINSTER (Worcester North).

Bigelow, C. E.
Brigham, C. S.
Curler, W. E.

LEOMINSTER (continued).

Hall, H. P.
Nye, H. R.
Pierce, A. H.
Shultis, F. C.
Sweeney, R. P.
Wheeler, A. A.

*LEVERETT (Franklin).**LExINGTON (Middlesex South).*

Barnes, W. L.
Piper, F. S.
Smithwick, M. P.
Tilton, J. O.
Tyler, W. M.
Valentine, H. C.

*LEYDEN (Franklin).**LINCOLN (Middlesex South).*

(See also: South Lincoln.)
Loring, R. G.

*LITTLETON (Middlesex North).**LONGMEADOW (Hampden).*

(See also: East Longmeadow.)

LOWELL (Middlesex North).

Ailing, M. L.
Baker, C. S.
Beaudet, E. A.
Bellehumeur, D. S.
Benner, B. R.
Bertrand, A. E.
Blanchard, P. D.
Boyle, J. F.
Brady, F. H.
Brennan, J. T. L.
Brunelle, Pierre
Bryant, M. D.
Caisse, G. E.
Carroll, T. F.
Cassidy, J. J.
Clark, E. J.
Coburn, H. F.
Collins, W. M.
Dennett, A. G.
Drury, J. N.
Ellison, D. J.
Fishman, Maurice
French, C. E.
Gage, F. L.
Gage, J. A.
Gardner, A. R.
Giguere, A. J.
Halpin, A. J.
†Huntress, Leonard
Jackson, W. B.
Jewett, H. W.
Johnson, J. B. A.
Johnson, W. A.
Jones, R. LeR.
Jones, W. M.
Kearney, J. P.
Lambert, J. H.
Lamoureux, J. E.
Lavalée, G. O.
†La Vigne, A. W.
Lawler, W. P.
Leahy, G. A.
Livingston, C. B.
Livingston, E. G.
Longhran, J. F.
Lovesey, R. E.
Mahoney, F. R.
Martin, G. F.
McAdams, J. P.
McCarty, J. J.

LOWELL (continued).

McCluskey, R. J.
 McGannon, T. G.
 Meehan, P. J.
 Mehan, J. A.
 Meigs, R. J.
 Mignault, Rodrigue
 Murphy, E. M.
 Murphy, F. P.
 O'Connor, J. B.
 Parker, R. W.
 Perkins, R. S.
 Pillsbury, B. H.
 Pillsbury, F. F.
 Pillsbury, G. H.
 Plunkett, H. B.
 Pulsifer, Nathan
 Robertson, E. A.
 Rodger, J. Y.
 Roughan, C. M.
 Ryan, W. F.
 †Sanders, C. B.
 Shaw, A. E.
 †Shaw, T. P.
 Simpson, C. E.
 Smith, F. H.
 Smith, T. B.
 Stewart, R. C.
 Sumner, H. H.
 Sweetsir, C. L.
 Tabor, E. O.
 Tighe, M. A.
 Van Deursen, G. L.
 Viles, C. A.
 Welch, E. J.
 Wilson, C. O.
 Young-Slaughter, E. E.

LUDLOW (Hampden).

Hoyt, P. A.

LUNENBURG (Worcester North).

Woods, C. E.

LYNN (Essex South).

Abbott, H. E.
 †Ahearne, C. A.
 Bedard, J. A.
 Bennett, H. P.
 Berg, T. A. J.
 Bixby, O. E.
 Blair, O. C.
 Blaisdell, J. H.
 Bowen, A. P.
 Breed, N. P.
 Burrows, M. C.
 Burns, W. L.
 Clarke, H. C.
 Cobb, C. M.
 Darling, A. E.
 Davis, H. L.
 Davis, S. R.
 De Langie, C. P.
 Dennison, A. S.
 Devlin, P. C.
 Dezell, F. B.
 Donovan, M. R.
 Driscoll, De C. J.
 Fraser, W. L.
 Garipay, E. P.
 Grady, T. F.
 Grant, J. H.
 Gray, G. H.
 Hagopian, L. G.
 Harriman, Perley
 Harris, A. E.
 Harris, W. DeB.
 Hartman, Gustave
 Hassett, L. W.
 Hawes, A. T.
 Hearn, W. L.

LYNN (continued).

Hennessey, T. F.
 Hoitt, C. L.
 Hopkins, W. T.
 Jenkins, C. E.
 Johnson, H. A.
 Jones, E. W.
 Joslyn, A. E.
 Judkins, C. L. M.
 Judkins, F. L.
 Kane, W. V.
 Keown, J. A.
 Kirkpatrick, G. H.
 Lemaire, W. F. (East Lynn)
 Limauro, L. H.
 Little, W. B.
 Lougee, F. T.
 Lougee, G. W.
 Lovejoy, C. A.
 Lovell, C. D. S.
 Lyons, G. A.
 McIntire, F. J.
 McLellan, W. E.
 MacRobbie, Alexander
 Manzan, J. J.
 Manix, E. T.
 Marshall, W. R.
 Martel, Stanislaus
 Martin, A. H.
 Martin, J. B.
 Mathes, R. W.
 Merrill, C. H.
 Merrill, E. A.
 Metzger, Butler
 Morse, F. A.
 Mott, G. E.
 Newhall, A. L.
 Newhall, H. F.
 Newhall, H. W.
 Oak, C. A.
 O'Keefe, E. S.
 O'Reilly, W. F.
 Pinkham, J. G.
 Rafferty, T. B.
 Rich, C. E.
 Ruppel, C. E. F.
 Ruppel, M. D.
 Schön, Edward
 Schummehl, F. E.
 Shaw, T. W.
 Sheldon, C. C.
 Smith, M. C.
 Stone, F. E.
 Trask, J. W.
 Tucker, A. W.
 Underhill, S. G.
 Wainshel, P. W.
 Ward, W. G.
 White, Everett
 Worthen, C. A.
 Zarella, A. M.

Lynnfield (Essex South, Center).

Freeman, F. W.

MALDEN (Middlesex South).

Barron, E. W.
 Brown, R. N.
 Bychowder, Victor
 Clarke, M. E.
 Clarke, W. E.
 Conley, B. F.
 Corbett, J. J.
 Cummings, M. E.
 Deal, G. F.
 Gallagher, N. A.
 Gay, F. W.
 †Goodwin, R. J. P.
 Griffin, A. G.
 Hartwell, W. W.
 Hoberman, Samuel

MALDEN (continued).

Hunt, W. E.
 Jones, C. D.
 Lawrence, J. W.
 Lougee, W. W.
 MacDonald, W. C.
 MacMichael, E. H.
 MacNeil, C. S. J.
 McBain, W. H.
 McCarthy, C. D.
 McCarthy, C. D., Jr.
 McCarthy, E. J.
 McCarthy, L. F.
 †Norris, A. L.
 Plummer, F. J.
 Prior, C. E.
 Proctor, J. W.
 Ryder, Godfrey
 Silver, L. S.
 Staples, C. H.
 Stevens, A. J.
 Vaughan, J. H.
 Watts, H. A.

MANCHESTER (Essex South).

Blaisdell, G. W.
 Burnett, F. L.
 Glendenning, R. T.

MANSFIELD (Bristol North).

Allen, W. H.
 Cook, J. W.
 Dunbar, F. H.
 Emard, G. A.
 Latham, R. M.
 Sullivan, D. T.

MARBLEHEAD (Essex South).

Eveleth, S. C.
 Greenwood, A. M.
 Hall, H. J.
 Ireson, F. R.
 Peck, M. W.
 Prouty, I. H.
 Sanborn, P. L.

MARION (Bristol South).

Cobb, A. C.
 Hopkins, R. H.

MARLBOROUGH (Middlesex South).

Chalmers, H. E.
 McCarthy, T. F.
 Merrill, C. H.
 Reilly, T. E.
 Robinson, H. A.
 Smith, C. W.
 Warner, C. T.

MARSHFIELD (Plymouth).

(See also: Marshfield Hills).
 Bartlett, C. W.
 King, F. A.

Marshfield Hills (MARSHFIELD).

Davis, G. R.
 Strong, S. L.

MARSTON'S MILLS (Barnstable).

Higgins, J. H.

MASHPEE (Barnstable).

Mattapan (Norfolk) (BOSTON)

Abbot, F. H.
 Cheever, A. W.
 Cheever, C. A.
 Fleming, P. J.

Mattapan (continued).

Grover, J. I.
 Guild, T. E.
 Hunt, F. H.
 Kelley, R. E. S.
 McPeake, J. R.
 Morse, N. N.
 Noble, E. C.
 Noble, M. G.
 St. Denis, J. N.
 Stearns, R. T.
 White, A. J.
 Winchester, G. W.

Mattapoisset (Bristol South).

Blaine, W. E.
 Tilden, I. N.

MAYNARD (Middlesex South).

Flaherty, E. J.
 Hamblen, Howard

MEDFIELD (Norfolk).

McPherson, G. E.
 Mitchell, Arthur
 Morse, H. L.

MEDFORD (Middlesex South).
 (See also: West Medford).

Barrett, E. W.
 Burke, W. T.
 Caruso, Septimio
 Chandler, N. F.
 Clark, M. W.
 Donnell, H. A.
 Fleming, E. R.
 Gahan, P. F.
 Guthrie, A. D.
 Hisley, F. R.
 Leavitt, M. A.
 Sise, L. F.

MEDWAY (Norfolk).

(See also: West Medway.)
 Yeaton, G. W.

MELROSE (Middlesex East).

(See also: Melrose Highlands.)

†Clark, J. S.
 Fay, J. H.
 Fish, E. C.
 Jack, E. S.
 Leonard, R. D.
 Marr, E. L.
 Perley, R. D.
 Pike, F. F.
 Raynes, M. B.
 Ruble, W. A.
 Sims, F. R.
 Small, A. E.
 Stratton, R. R.

Melrose Highlands (MELROSE).

Harlow, C. W.
 Provandie, P. H.

MENDON (Worcester).*MERRIMAC* (Essex North).

Sweetsir, F. E.

METHUEN (Essex North).

Bakelof, R. V.
 Cushman, H. L.
 Dearborn, H. F.
 Lawlor, R. H.
 McAllister, F. D.
 Norris, R. C.
 Nutt, W. B.
 Parr, John
 Reed, V. A.

MIDDLEBOROUGH (Bristol North).

Breck, Samuel
 Coolidge, Sumner
 Elliott, Alfred
 †Ellis, G. L.
 Holmes, D. H.

MIDDLEFIELD (Hampshire).*MIDDLETON* (Essex South).

Ewing, G. W.

MILFORD (Worcester).

French, J. M.
 Keith, H. L.
 Knight, M. W.
 Lally, F. H.

MILBURY (Worcester).

Church, C. A.
 Hurd, A. G.
 Lincoln, J. R.

Miller's Falls (MONTAGUE).

Cudworth, C. D.

MILLIS (Norfolk).

Hill, E. L.

MILTON (Norfolk).

Bartol, E. F. W.
 Edsall, D. L.
 Foot, N. C.
 Forbes, Alexander
 Kite, W. C.
 Lane, W. A.
 McCarthy, F. P.
 Pierce, M. V.
 Rackemann, F. M.
 Rowe, C. A.

Mittineague (WEST SPRINGFIELD).

Downey, H. A.

MONROE (Franklin).*MONSON* (Hampden).

Ellis, F. W.
 Jackson, C. W.

MONTAGUE (Franklin).

(See also: Miller's and Turner's Falls.)

MONTEREY (Berkshire).*MONTGOMERY* (Hampden).*MOUNT WASHINGTON* (Berkshire).*NAHANT* (Essex South).

Cusick, L. F.

NANTUCKET (Bristol South).

Grouard, J. S.
 Lewis, F. E.

NATICK (Middlesex South).

(See also: South Natick.)

Bancroft, G. A.
 Baum, E. G.
 Burke, M. F.
 Cochran, W. J.
 Cook, C. H.
 Rowland, E. G.
 Sylvester, W. H.
 Walcott, W. W.

NEEDHAM (Norfolk).

(See also Needham Highlands.)
 DeLue, F. S.

NEEDHAM (continued).

MacGray, C. L.
 †Mansfield, H. T.
 Pease, C. W.

Neponset (BOSTON).

Ballou, A. R.

Needham Highlands (NEEDHAM).

Mitchell, William

NEW BEDFORD (Bristol South).

Allen, H. C.
 Atchison, C. M.
 Bonnar, J. M.
 Bonney, C. A., Jr.
 Brunelle, A. L.
 Bullard, J. T.
 Burr, C. E.
 Canney, E. R.
 Cody, E. F.
 Connor, C. F.
 Croacher, A. W.
 Dehn, E. W.
 Donovan, S. E.
 Foster, E. E.
 Frasier, J. A.
 Gardner, E. D.
 Gennert, Jacob
 Grochinsky, Herman
 Hathaway, J. G.
 Hayes, S. W.
 Hough, G. de N.
 Howes, F. M.
 Hudnut, F. P.
 Johnson, E. St. J.
 Kirby, H. C.
 La Riviere, A. de C. E.
 Leary, C. J.
 Lowney, D. J.
 Mandell, A. H.
 Marsden, George
 Mathewson, F. W.
 Moncrieff, W. A.
 Nield, W. A.
 O'Brien, D. P.
 O'Connor, P. H.
 Paquin, J. U.
 Pearce, G. G.
 Perras, L. A.
 Perry, H. E.
 †Perry, Martha
 Peterson, C. A. R.
 Pitta, J. C. da S.
 Pothier, J. C.
 Potter, L. F.
 Pratt, C. A.
 Pratt, D. D.
 †Prescott, C. D.
 Provost, R. G.
 Robbins, E. E.
 Robbins, E. S.
 Roche, T. N.
 St. Germain, J. P.
 Salles, J. M.
 Seaver, E. P., Jr.
 Segall, S. K.
 Senesac, A. N.
 Shanks, Charles
 Stetson, P. E.
 Stevens, H. L.
 Taveira, A. J.
 Turner, W. K.
 Weeks, J. F.
 Wheeler, E. H.
 Whitney, E. M.
 Winslow, B. S.
 Young, E. W.

NEW BRAintree (Worcester).*NEWBURY* (Essex North).

NEWBURYPORT (Essex North).

Hall, C. F. A.
Hamilton, R. De L.
Healy, T. R.
Hurd, R. C.
Johnson, C. F.
Little, A. N.
Nason, A. C.
Noyes, E. H.
Peter, A. J.
Shaw, J. W.
Snow, F. W.
Tigh, Frederick
Toppau, R. L.

NEW MARLBOROUGH (Berkshire).

NEW SALEM (Franklin).

NEWTON (Middlesex South).

(See also: Newton Center, Newton Highlands, Newton Upper Falls, Newtonville, West Newton, Auburndale, Chestnut Hill, Waban.)

Cummings, A. C.
Dempsey, J. E.
†Eddy, G. S.
Gallagher, T. M.
Holmes, G. W.
Leary, A. J.
Lowry, F. P.
Marey, H. O., Jr.
Marston, W. W.
Mellus, Edward
Moore, Howard
O'Donnell, F. M.
Painter, C. F.
Pearson, C. L.
Reid, W. D.
†Stone, L. R.
Stubbs, F. R.
Tilton, E. E.
Webber, F. W.
Young, J. H.

Newton Center (NEWTON).

Andrews, E. A.
†Crawford, S. M.
Friedman, L. V.
Hanscom, R. F.
Kirkwood, A. S.
Leonard, E. De W.
†Loring, R. P.
May, G. E.
Sylvester, P. H.
Watters, Henry
West, G. L.

Newton Highlands (NEWTON).

Bartlett, P. C.
Mellen, E. W. A.
Thompson, C. A.
Withee, F. E.

Newton Upper Falls (NEWTON).

†Everett, W. S.
McOwen, W. H.

Newtonville (NEWTON).

Baker, D. E.
Chamberlin, H. A.
Clark, F. R.
Hunt, H. O.
Hunt, W. O.
Miner, L. M. S.
Thayer, H. W.

NORFOLK (Norfolk).

(See also: East Norfolk.)

North Abington (ABINGTON).

Curtin, J. F.
Rand, R. B.
Wheatley, F. E.
Wheatley, F. G.

NORTH ADAMS (Berkshire).

Brown, M. M.
Brown, O. J.
Brown, W. E.
Carpenter, R. J.
Curran, G. L.
†Matte, J. H. A.
†Millard, H. J.
Riley, J. H.
Russell, E. E.
Stafford, F. D.
Thompson, G. H.

North Amherst (AMHERST).

Stowell, Joab.

NORTHAMPTON (Hampshire).

(See also: Florence.)

Adams, W. H.
Ball, A. N.
Bober, B. A.
Brown, E. W.
Clark, S. A.
Cobb, C. T.
Collins, J. D.
Collins, W. J.
Cooney, M. E.
Copeland, E. H.
Dow, F. E.
Fay, J. M.
†Gardner, C. R.
Gilman, Florence
Greene, E. C.
Hanson, J. G.
Hayes, J. E.
Hilliard, W. D.
Hitchcock, J. S.
Houston, J. A.
Hudnut, P. A.
Hughes, E. H.
James, B. F., Jr.
Leeper, M. E.
Minshall, A. G.
O'Keefe, A. M.
Perry, H. B.
Shores, H. T.
Thomas, E. E.
Whitney, E. W.
Whitney, H. W.

NORTH ANDOVER (Essex North).

Clark, H. A.
Kittredge, Joseph
Smith, F. S.

NORTH ATTLEBOROUGH (Bristol North).

Carley, F. J.
Gerould, J. B.
Kilby, H. S.
Shoemaker, A. B.

NORTH BILLERICA (Billerica).

Forhan, N. K.

NORTHBOROUGH (Worcester).

†Barnes, H. J.
Stanley, J. M.

NORTHBIDGE (Worcester).

(See also: Whitinsville.)

NORTH BROOKFIELD (Worcester).

North Chelmsford (CHELMSFORD).

Varney, F. E.

North Easton (EASTON).

Porter, R. B.
Stevenson, W. M.

NORTHFIELD (Franklin).

Newton, A. L.
Philbrick, R. H. (East)
Wood, N. P.

North Grafton (GRAFTON).

Clapp, F. H.
MacIntyre, W. A.
Pattrell, A. E.
Smith, W. L.

North Oxford (OXFORD).

Stone, Byron

NORTH READING (Middlesex East).

Averill, C. W.
MacCorison, C. C.
Willoughby, E. C.

North Weymouth (WEYMOUTH).

Cox, A. C.
Drake, W. A.

North Wilbraham (WILBRAHAM).

Damon, A. L.

NORTON (Bristol North).

Round, A. M.

NORWELL (Plymouth).

NORWOOD (Norfolk).

Fenton, A. A.
Field, H. M.
†Fogg, I. S.
Gould, C. S.
Hagerty, J. J.
Hartwell, A. S.
Norton, E. C.
Plimpton, L. H.
Riemer, H. B. C.

OAKHAM (Worcester).

OAK BLUFFS (Bristol South).

ORANGE (Franklin).

Leach, A. C.
Mahar, H. R. C.
Smith, H. F. M.
Ten Broeck, S. J.

ORLEANS (Barnstable).

Besse, F. A.

Osterville (BARNSTABLE).

Kinney, D. D'A.

OTIS (Berkshire).

OXFORD (Worcester).

(See also: North Oxford.)
Fletcher, R. S.
Woodward, J. R.

PALMER (Hampden).

(See also: Three Rivers).
Caro, Heiman
Cleaves, H. F. T.
Flood, Everett
Greene, R. A.
Hodskins, M. B.
Moore, G. A.
Schneider, J. P.

PAXTON (Worcester).

PEABODY (Essex South).

Burt, F. L.
Carroll, H. G.
Elder, F. O.
Foss, R. E.
Foster, H. K.
Hickey, J. J.
Jordan, J. F.
Kelley, L. K.
Kennard, H. D.

PEABODY (continued).

Manoogian, B. J.
 †Shanahan, John
 Tucker, S. C.
 Varney, E. M.

PELHAM (Hampshire).

PEMBROKE (Plymouth).
 (See also: Bryanville.)PEPPERELL (Middlesex North).
 Heald, C. G.
 Qua, L. R.

PERU (Berkshire).

PETERSHAM (Worcester North).

PHILLIPSTON (Worcester North).

Pigeon Cove (Rockport).
 Baker, H. N.

PITTSFIELD (Berkshire).

Bartlett, O. L.
 Blanchard, R. H.
 †Burton, S. C.
 Colt, Henry
 Currier, W. H.
 Dodd, I. S. F.
 Eisner, M. S.
 England, A. C.
 Finkelstein, Nathan
 Flournoy, Thomas
 Flynn, J. J.
 Frawley, W. T.
 Hennelly, T. P.
 Howard, E. H.
 Howe, J. D.
 Kelly, W. P.
 Lally, W. J.
 Langlois, J. A.
 †Leavitt, W. W.
 Leslie, C. T.
 Littlewood, Thomas
 Mayberry, F. E.
 Mellen, H. G.
 Mercer, W. J.
 Merrill, A. P.
 Paddock, B. W.
 †Paddock, W. L.
 Richardson, C. H.
 Roberts, F. A.
 Roney, H. B.
 Schneider, H. A.
 Streeter, H. A.
 Sullivan, J. A.
 Sylvester, A. W.
 Tate, H. J.
 Taylor, E. H.
 Thomas, J. B.
 Tracy, W. L.
 Walker, M. H., Jr.
 Wilder, W. O.
 Withington, A. B.
 Woodruff, R. A.

PLAINFIELD (Hampshire).

PLYMOUTH (Plymouth).

Brown, W. G.
 Burns, H. H.
 Churchill, J. D.
 †Cowles, Edward
 Hill, E. D.
 Hitchcock, H. R.
 Prince, C. O.
 Reed, L. B.

PLYMPTON (Plymouth).

PRESCOTT (Hampshire).

PRINCETON (Worcester).
 Lewis, E. S.

PROVINCETOWN (Barnstable).

Birge, E. F.
 Birge, W. S.
 Cass, F. O.
 Curley, C. P.
 Witcher, B. R.

QUINCY (Norfolk South).

(See also: Atlantic, Norfolk
 Downs, West Quincy, Wollas-
 ton.)

Ahlstrom, Hjalmar
 Burke, F. R.
 Bushnell, E. H.
 Doble, E. E.
 Dolan, W. F.
 Ellsworth, S. W.
 Hardwick, S. C.
 Harkins, W. J., Jr.
 Hunting, N. S.
 Hurley, W. C. R.
 Jones, E. E.
 Lynch, C. J.
 McCausland, W. J.
 MacLeod, J. M.
 Middleton, W. J.
 Reardon, B. D.
 Ryder, G. H.
 Sargent, W. L.
 Sheahan, G. M.
 Smith, E. E.

RANDOLPH (Norfolk South).

Granger, F. C.
 Higgins, G. V.
 Myrick, A. W.

RAYNHAM (Bristol North).

READING (Middlesex East).

Brown, W. J.
 Dow, G. F.
 Halligan, E. M.
 Henderson, C. R.
 Richmond, E. D.
 Smalley, F. L.

REHOBOTH (Bristol North).

REVERE (Suffolk).

Andrews, F. F.
 Bond, W. G.
 Cummings, E. F.
 Monahan, E. J.
 Morris, J. S.
 Newton, W. C.
 Silbermann, Maurice
 Skirball, J. J.
 Skirball, L. J.
 Walker, William
 Walsh, J. E.
 Wilkins, G. A.

RICHMOND (Berkshire).

Rochdale (LEICESTER).

Leach, E. M.
 †Leach, H. M.

ROCHESTER (Bristol South).

ROCKLAND (Plymouth).

Corey, F. H.
 Frame, Joseph
 Knight, C. E.
 Osgood, Gilman.

ROCKPORT (Essex South).

(See also: Pigeon Cove.)
 Cleaves, E. E.
 Tupper, A. M.

Roslindale (Norfolk) (BOSTON).

(See also: Forest Hills.)

Allen, A. N.
 Beede, M. J.
 Behrman, R. A.
 Ford, J. F.
 King, N. J. Q.
 Lynch, D. L.
 Sawyer, A. R.
 Sawyer, E. LeR.
 Steele, A. E.
 Stevens, Seriah

ROWE (Franklin).

ROWLEY (Essex North).

Collins, F. L.

Roxbury (Norfolk) (BOSTON).

Abbe, E. M.
 Adams, John
 Addelson, Nathan
 Ascher, Joseph
 Atwood, B. L.
 Avedisan, A. D.
 Barry, J. H.
 Bartlett, W. O.
 Brownrigg, J. S.
 Callahan, S. A.
 Clement, G. W.
 Cohen, M. M.
 Cohen, S. A.
 Colmes, Abraham
 Coupal, J. F.
 Coyne, T. J.
 Cronin, M. J.
 Cushman, G. T.
 Daly, B. T.
 Darling, C. B.
 Davidson, K. M.
 Drury, D. W.
 Dunbar, F. C.
 Edelstein, Samuel
 †Edson, P. O'M.
 Emery, W. H.
 Fitz, Reginald
 Frank, Morris
 Galligan, E. T.
 Gavin, J. H.
 Gerstein, Maurice
 Glunts, David
 Goodman, Samuel
 Gray, A. M.
 Gray, E. T.
 Greene, T. F.
 Greene, W. H.
 Guy, W. B.
 Hall, J. B., Jr.
 Hermann, O. J.
 Hodges, A. D.
 Holzman, Joseph
 Horrax, Gilbert
 Howard, H. B.
 Howard, M. E. P.
 Hunt, G. P.
 Johnson, D. J.
 Johnson, H. L.
 Keeler, W. B.
 Knowlton, C. D.
 Konikow, M. J.
 Levine, S. A.
 Libby, E. N.
 Luenthal, Harry
 Littlefield, S. H.
 Louis, L. J.
 Lowrey, L. G.
 Luftig, Jacob
 Macdonald, C. W.
 Macdonald, F. C.
 Martin, Edward
 Martin, H. W.

Roxbury (continued).

Mason, G. McC.
 May, J. S.
 McCurdy, T. E. A.
 McLaughlin, J. I.
 McLeod, J. S.
 Moulton, A. T.
 Murphy, E. F.
 Murphy, T. J.
 Noyes, A. P.
 Olin, Harry
 Parker, C. C., Jr.
 Patch, W. T.
 Peabody, F. W.
 Pigeon, J. C. D.
 Powers, E. P.
 Pratt, E. A.
 Prena, Joseph
 Rapoport, Boris
 Richmond, Simon
 Robins, S. A.
 Rochford, G. E.
 Rubin, S. H.
 Sanborn, J. W.
 Schmidt, F. S.
 Scott, G. H.
 Shain, A. I.
 Shay, C. E.
 Shay, T. M.
 Sheehan, E. B.
 Snow, F. S.
 Sternberg, J. E.
 Stetson, F. W.
 Stone, G. H.
 Sughrue, D. F.
 Sullivan, J. L.
 Taylor, F. L.
 Thayer, Eugene
 Towne, E. B.
 Turetzky, W. L.
 Wallace, John
 †Wescott, W. H.
 West, E. G.
 White, H. W.
 White, W. A.
 Winn, C. H.
 Young, R. R.

ROYALSTON (Worcester North).**RUSSELL (Hampden).****RUTLAND (Worcester).**

Alley, L. A.
 Chamberlain, W. E.
 Crane, B. T.
 Emerson, E. B.
 Hampsan, N. M.
 Howes, W. B.

Sagamore (Bourne).

Curry, E. F.

SALEM (Essex South).

Ahearn, C. A., Jr.
 Aronson, Charles
 Atwood, F. S.
 Blair, G. K.
 Burbeck, E. K.
 Carlton, F. C.
 Chisholm, L. C.
 Clark, DeW. S.
 Curtis, C. L.
 Donaldson, J. F.
 Elliot, H. L.
 Field, M. T.
 Finnegan, P. J.
 Goodell, G. Z.
 Gould, C. R.

SALEM (continued).

Haley, W. T.
 Haywood, R. W.
 Hennessey, W. W.
 Kittredge, Thomas
 LeBoeuf, A. T.
 Lesses, Max
 McDermott, W. V.
 Peirson, E. L.
 Phippen, Hardy
 Phippen, W. G.
 Porier, Emile
 Porier, Horace
 Robbins, F. G.
 Rnshford, E. A.
 Sargent, A. N.
 Sheehan, W. J.
 †Shreve, O. B.
 Simpson, J. E.
 Sturgis, B. F., Jr.
 Towle, E. D.
 Tucker, G. E.
 Wilson, C. M.

SALISBURY (Essex North).**SANDSFIELD (Berkshire).****SANDWICH (Barnstable).**

Beale, S. M., Jr.
 Currier, C. R.
 Procter, T. W.

SAUGUS (Essex South).

(See also: Cliftondale.)

†Gale, G. W. (East)
 Farcher, G. C.

SAVOY (Berkshire).**SAXONVILLE (FRAMINGHAM).**

Derby, W. P.

SCITUATE (Plymouth)

(See also: Scituate Center, Scituate Harbor.)

Scituate Center (SCITUATE).

Handy, H. T.

Scituate Harbor (SCITUATE).

Alexander, T. B.

SEEKONK (Bristol North).**SHARON (Norfolk).**

Dole, C. F.
 Gay, W. M.
 Griffin, W. A.

SHEFFIELD (Berkshire).

Wakefield, A. T.

SHELBURNE (Franklin).

(See also: Shelburne Falls).

Shelburne Falls (SHELBURNE).

†Canedy, F. J.
 Guild, B. T.
 Upton, C. L.

SHEBROOK (Middlesex South).**SHIRLEY (Worcester North).****SHEWBURY (Worcester).**

Chase, E. L.
 Smith, Myrtle

SHUTESBURY (Franklin).**SOMERSET (Bristol South).**

McCreery, C. C.

SOMERVILLE (Middlesex South).

(See also: West Somerville.)

Allison, C. E.
 Bateman, F. E.
 Bell, R. D.
 Bolton, C. J.
 †Booth, E. C.
 Buffum, H. E.
 Carvill, A. H.
 Carvill, Maude
 Caswell, B. H.
 Curtis, H. F.
 Dailey, E. J.
 Dervin, L. J.
 DeWolf, C. W.
 Durell, T. M.
 Finnerty, C. W.
 French, G. H.
 Gunter, F. C.
 Hatchett, W. J.
 Hodgdon, R. F.
 Hughes, G. F.
 Maguire, C. F.
 Maguire, E. L.
 McCaffrey, C. F.
 McCarty, E. M.
 Meyer, E. J.
 Mills, A. E.
 Mongan, C. E.
 Morse, F. L.
 Muldoon, M. T.
 Newton, E. R.
 Newton, F. L. S.
 Place, R. W.
 Pote, L. H.
 Price, O. J.
 Raymond, L. H.
 Robbins, E. H.
 †Sanborn, E. A.
 Sewall, E. F.
 Shanahan, T. J.
 Shaw, Francis
 Smith, F. G.
 Stephens, F. N.
 Towle, C. C.
 Trueman, H. S.
 Walker, H. A.
 White, M. W.
 Whiting, G. W. W.
 Yenetchi, H. A.

SOUTHBOROUGH (Worcester).

Jackson, A. W.

South Boston (BOSTON).

Baucroft, W. B.
 Bernard, B. L.
 Boland, E. S.
 Cross, W. P.
 Denning, E. J.
 Devine, W. H.
 Doggett, F. F.
 Fletcher, R. W.
 Gallivan, W. J.
 Hurley, E. D.
 Jakmaub, P. J.
 Keenan, H. J.
 Lawlor, J. C.
 Mayers, J. E.
 Morris, G. P.
 Morris, J. G.
 Praino, Gaetano
 Reddy, J. W.
 Redmond, J. W.
 †Ruddick, W. H.
 Sheehan, W. J.
 Sheridan, P. E. A.
 Slattery, J. R.
 Stuart, F. W.
 Timmins, E. F.
 Tynan, J. P.

South Braintree (BRAINTREE).

Dame, F. R.
Merriam, F. H.
Sullivan, C. A.

SOUTHBIDGE (Worcester).

Bradford, C. C.
Olin, F. H.
Pagé, J. G. E.
Reed, W. G.
Waite, L. R.

South Dartmouth (DARTMOUTH).

Cushman, A. B.

South Deerfield (DEERFIELD).

Sutor, H. A.

South Dennis (DENNIS).

Davis, C. A.

South Hadley (Hampshire).

(See also: South Hadley Falls.)
Lang, H. B.
Underhill, E. C.

South Hadley Falls (SOUTH HADLEY).

Doonan, H. E.
Leland, F. LeR.

South Hamilton (HAMILTON).

Davis, C. H.

SOUTHAMPTON (Hampshire).*South Lincoln* (LINCOLN).

Blodgett, S. H.
Hart, J. S.

South Natick (NATICK).

Hills, C. E.

South Sudbury (SUDBURY).

Oviatt, G. A.

South Weymouth (WEYMOUTH).

Emerson, G. E.
Granger, K. H.
Tirrell, V. M.

SOUTHWICK (Hampden).*SPENCER* (Worcester).

Austin, J. C.
Ellison, G. W.
Fowler, G. R.
Peck, A. F.

SPRINGFIELD (Hampden).

(See also: Indian Orchard.)

Anthony, J. C.
Bacon, T. S.
Baldwin, E. E.
Bates, E. A.
Benner, R. S.
Birnie, J. M.
Blair, O. R.
Boyd, F. P.
Boyd, J. V. W.
Boyer, J. N.
Brickett, R. H.
Brigham, F. C.

†Brooks, L. S.
Brown, D. J.
Budington, H. F.

Burke, G. H.
Byrnes, H. F.
Calkins, C. H.
Calkins, I. R.

†Calkins, Marshall
Camill, R. E.

SPRINGFIELD (continued).

Carleton, Dudley
Carleton, Ralph
Chapin, D. L.
Chapin, L. D.
Chapin, W. A. R.
Chapin, W. H.
Chapman, C. R.
Claffy, J. McM.

†Clark, David
Cort, P. M.

Dalton, G. F.
Davidson, H. J. D.

Davis, E. L.
Deane, W. H.

DeMarco, T. A.
Dexter, F. F.

Dillon, M. J.
Dillon, W. J.

Downey, C. J.
Dubois, E. C.

Eastman, A. C.
†Edes, R. T.

Emerson, H. C.
Everett, F. L.

Finch, G. H.
Foss, G. H.

Galvin, A. H.
Gates, E. A.

Gaylor, J. F.
Gilechrist, J. M.

Goodell, William
Gould, E. H.

Halton, E. P.
Harriman, D. E.

Herrick, J. T.
Hewitt, C. E.

Hill, I. C.
Hillard, J. P.

Hirsch, H. L.
Hopkins, F. E.

Hosley, W. A.
Hubbard, G. W.

Irwin, V. J.
Jones, F. D.

Judd, E. H.
Jurlst, Charles

Keefe, D. E.
Kilroy, Philip

Kinloch, R. A.
Koplin, Harry

LaRochelle, A. H.
La Rochelle, F. D.

Leary, W. C.
Lewis, S. A.

Lynch, C. F.
Lynch, P. M.

†McClellan, G. C.
McGulity, J. T.

McKechnie, F. J.
Mahoney, E. J.

Maloney, J. M.
Martin, H. C.

Merritt, V. S.
Moody, F. F.

Moriarty, P. M.
Munkaly, W. E.

Myers, E. Y.
†Nims, E. B.

Ober, R. B.
Overlander, J. E.

Parmelee, W. J.
Paul, S. J.

Peck, R. H.
Quinn, J. H.

Rabinovitz, Bernard
†Rice, A. R.

Rice, A. G.
Ritter, Henry
Rochford, R. A.

SPRINGFIELD (continued).

Rumrill, S. D.
Russell, S. J.
Russell, W. B.
Ryan, S. E.

Sannella, Salvatore
Schadt, G. L.

Schillander, C. A.
Seelye, R. H.

Seibels, R. E.
Slutskin, M. L.

Smith, H. L.
Smith, W. A.

Spaid, C. J.
Squier, A. O.

†Stebbins, G. S.
Stoddard, M. J.

Stoneman, E. A.
Street, C. E.

Streeter, J. F.
Sullivan, E. C.

Sullivan, J. C.
Sweet, F. B.

Tracy, J. M.
Van Allen, H. W.

Van Gaasbeek, G. H.
Walker, C. B.

Weiser, W. R.
Weston, G. D.

Whitcomb, C. A.
White, B. P.

Wilbur, S. M.
Wilcox, H. H.

Williams, A. C.
†Woods, G. L.

Zimmerman, Henry

State Farm (BRIDGEWATER).

Baker, L. A.
Carlisle, F. H.
Farrar, L. O.
Weller, J. H.

STERLING (Worcester).*STOCKBRIDGE* (Berkshire).

Downing, F. C.
Eaton, H. D.
Riggs, A. F.
Stockwell, H. E.

STONEHAM (Middlesex East).

Blenkhorn, James
Hersam, M. P.
Kerrigan, J. H.
Nickerson, G. W.
Park, F. E.
Sheehan, M. D.

STOUGHTON (Plymouth).

Faxon, N. W.
Faxon, W. O.

STOW (Middlesex South).*STURBRIDGE* (Worcester).

(See also: Fiskdale.)

SUDBURY (Middlesex South).

(See also: South Sudbury.)

SUNDERLAND (Franklin).

Moline, Charles

SUTTON (Worcester).

(See also: Manchaug.)

SWAMPSCOTT (Essex South).

Bangs, C. H.
Bleknell, R. E.
Godfrey, J. W.

SWAMPSCOTT (continued).

Grimes, Loring
Jones, L. A.
Lowd, H. M.

SWANSEA (Bristol South).

TAUNTON (Bristol North).
(See also: East Taunton.)

Atwood, C. A.
†Bassett, E. J.
Beaulieu, F. X.
Carey, F. A.
Clark, T. F.
Crandell, A. R.
Cusick, T. F.
Dean, R. D.
†Deane, A. S.
Fox, W. Y.
Galligan, E. J.
Goss, A. V.
Hubbard, F. A.
Learoyd, C. B.
MacDonald, D. F.
McGraw, A. J.
Milot, A. F.
Murphy, E. F.
Murphy, F. A.
Murphy, J. B.
Murphy, J. L.
O'Brien, J. F.
†Paige, Nomus
Pierce-Higgins, Eudora
Reed, B. A.
Ripley, H. G.
Robinson, T. J.
Roderick, C. E.
Sayles, J. B.
White, H. A.

TEMPLETON (Worcester North).
(See also: Baldwinsville.)
Greenwood, S. E.

TEWKSBURY (Middlesex North).

Coburn, H. R.
Hanson, W. T.
Larrabee, H. M.
Nichols, J. H.
Peirce, G. A.
Perry, Sherman
Quennell, W. L.
Roach, A. J.

Three Rivers (PALMER).

Giroux, Charles
Miller, S. O.

TISBURY (Bristol South). No P. O.
Post Office address, Vineyard Haven.

Davis, S. T.
Mayhew, O. S.
Savage, R. E.

TOLLAND (Hampden).

TOPSFIELD (Essex South).
Sanborn, ByronTOWNSEND (Worcester North).
(See also: West Townsend.)

TRURO (Barnstable).

Turner's Falls (MONTAGUE).

Leary, P. P.
McGillicuddy, R. A.
Messer, C. C.

TYNDSBOROUGH (Middlesex North).
Lambert, F. De F.

TYRINGHAM (Berkshire).

URTON (Worcester).

UXBRIDGE (Worcester).

Griswold, M. L.
Johnson, W. L.
Ledbury, J. W.
Little, J. T.

Waban (BROOKLINE).
Bessey, E. E.

Waban (NEWTON).

Lothrop, O. A.
Lounge, F. T.
McGee, F. M.

WAKEFIELD (Middlesex East).

Crosby, L. M.
Dutton, Charles
Dutton, Richard
Heath, J. W.
†Jordan, Charles
Montague, C. E.
O'Leary, J. A.
Sopher, C. L.
Tyzzar, E. E.
Woodbury, F. T.

WALES (Hampden).

WALPOLE (Norfolk).
(See also: East Walpole.)
Fuller, F. H.

WALTHAM (Middlesex South).

Bell, Conrad
Collins, Richard
Cousins, N. W.
Dascombe, O. L.
Dennen, R. W.
Fuller, C. B.
Hinchey, Richard
Holbrook, Bradbury
Hoyt, W. S.
Jarvis, W. F.
Lewis, J. P.
MacDonald, F. L.
Mackenzie, R. C.
McCormick, C. J.
Mosher, M. J.
O'Donnell, G. T.
Porter, C. T.
Stiles, F. M.
Taylor, R. A.
Willis, C. A.
Wood, H. A.
Worcester, Alfred
Young, A. R.

WAQUOIT (FALMOUTH).
Jones, L. C.

WARE (Hampshire).

Gafney, H. D.
Miner, W. W.
Pearson, M. W.
Ryan, D. M.

WAREHAM (Bristol South).
Morse, C. E.

WARREN (Worcester).

DeLand, C. A.
†Phelps, O. W.

WARWICK (Franklin).
Goldsbury, P. W.

WASHINGTON (Berkshire).

WATERTOWN (Middlesex South).

Chase, C. O.
Creely, O. S.
†Davenport, B. F.
Higginbotham, F. A.
Meredith, P. L.
Messerve, E. A.
Robie, A. H. P.
Williamson, C. I.

Waverley (BELMONT).

Abbott, E. S.
Clark, L. B.
Fernald, W. E.
Hoch, T. A.
Kelley, C. M.
Kewer, L. T.
Packard, F. H.
Raymond, C. S.
Tuttle, G. T.
Wallace, A. M.
Warren, L. M.
Whitney, R. L.
Woodill, E. E.

WAYLAND (Middlesex South).

WEBSTER (Worcester).

Bragg, L. R.
Cutler, M. F.
Généreux, J. O.
Hart, G. F.
Littlefield, G. C.
Roy, J. N.
Saunders, T. H.
Smith, E. E.

WELLESLEY (Norfolk).

(See also: Wellesley Hills.)
Anthony, G. C.
Bancroft, E. A.
Gregg, Donald
Marsh, Albert
Proctor, F. J.
Raymond, K. P.
†Stone, M. C.
White, L. E.

Wellesley Hills (WELLESLEY).

Cleveland, H. H.
Garland, F. E.
Greenwood, Allen
†Hazelton, I. H.
Hewins, P. W.
Jones, G. N.
Lichtenhaeler, M. E.
†Macdonald, W. L.
Overholser, Winfred
Schofield, O. L.
Stanwood, F. A.

WELLFLEET (Barnstable).
Bell, C. J.

WENDELL (Franklin).

WENHAM (Essex South).

WESTBOROUGH (Worcester).

Ayer, T. H.
Cilley, D. P.
Clark, A. U. F.
Fuller, S. C.
Knight, C. S.
Mahoney, W. F.
Newton, R. S.

WEST BOYLSTON (Worcester).
Trask, H. W.

WEST BRIDGEWATER (Plymouth).

WEST BROOKFIELD (Worcester).

West Dennis (DENNIS).

Osborne, E. S.

WESTFIELD (Hampden).

Atwater, J. B.
Brace, G. W.
Chadwick, H. D.
Chisholm, M. D.
Clark, F. T.
Cosgrove, J. J.
Davis, F. D.
Douglas, A. J.
Dutton, J. M.
James, G. H.
Maroney, P. J.
Marr, R. McC.
Noble, A. F.
Smith, E. S.

WESTFORD (Middlesex North).

Sherman, W. H.

WESTHAMPTON (Hampshire).

West Harwich (HARWICH).

Nickerson, J. P.

West Medford (MEDFORD).

Bean, C. F. K.
Drake, R. A.
Killam, F. H.
Wilkins, S. H.

West Medway (MEDWAY).

Butler, Samuel
†Quint, N. P.

WESTMINSTER (Worcester North).

Mossman, George

WEST NEWBURY (Essex North).

Orcutt, W. L.

West Newton (NEWTON).

Atkinson, L. D. R.
Chandler, Harold B.
Chandler, Henry B.
Fisher, I. J.
Jack, L. H.
Knowles, W. F.
Lowe, F. M.
Macomber, Donald
Nielsen, E. B.
Palne, N. E.
Sherman, F. M.
Wells, D. W.

WESTON (Middlesex South).

Van Nüys, Presenins

WESTPORT (Bristol South).

Burt, E. W.

West Quincy (QUINCY).

Ash, J. H.
Dion, T. J.

West Roxbury (Roxbury) (BOSTON).

Gorham, G. H.
Hamilton, B. E.
Howell, W. W.
Jillson, F. C.
Knight, C. L.
Knudson, M. M.
Lougée, J. L.
Reagh, A. L.
Sedgley, F. R.
Shadman, A. J.
Stevens, H. B.
Watters, W. H.

West Somerville (SOMERVILLE).

Ayres, H. W.
Blake, A. H.
Bond, W. L.
Bryant, G. W.
Cholerton, Herbert
Gillis, J. E.
Liverpool, C. H.
McLean, J. A.
Mahoney, G. C.
†Makechnie, H. P.
Miles, G. A.
Osgood, G. E.
Pillsbury, E. D.
Richardson, C. A. C.
Ruston, W. D.
Sylvester, N. R., Jr.
Wagner, E. J.
Walker, W. W.

WEST SPRINGFIELD (Hampden).

(See also: Miltineague.)
Bostick, W. J.
Corcoran, G. B.
Steele, G. L.

WEST STOCKBRIDGE (Berkshire).

Leonard, Z. L.

WEST TISBURY (Bristol South).

West Townsend (TOWNSEND).

Ely, R. S.

WESTWOOD (Norfolk).

WEYMOUTH (Norfolk South).

(See also: East, North and South
Weymouth.)

Chitt, G. L.
Chase, Joseph, Jr.
Jacoby, Rudolph
Pease, L. W.

WHATELY (Franklin).

Whitinsville (NORTHERIDGE).

Balmer, W. E.
Barry, E. W.
Harriman, C. H.

WHITMAN (Plymouth).

Beaulieu, E. J.
Dyer, E. A.
Fobes, H. E.
Hanley, F. J.
Lovell, C. E.
MacKeen, A. A.
Pulsifer, W. H.
Rood, A. D.

WILBRAHAM (Hampden).

(See also: North Wilbraham.)

WILLIAMSBURG (Hampshire).

(See also: Haydenville.)
Hayes, J. G.

WILLIAMSTOWN (Berkshire).

(See also: Blackinton.)
Adriance, Vanderpoel
Howard, F. H.
†Mather, E. E.
McWilliams, N. B.

WILLIMANSETT (CHICOPEE).

Mead, F. A.

WILMINGTON (Middlesex East).

Buck, W. E.
Buzzell, D. T.

WINCHENDON (Worcester North).

Hedry, J. G.
Holzer, W. F.
Kenney, C. B.
Kenney, W. C.
Pelletier, A. G.
Sullivan, M. G.

WINCHESTER (Middlesex East).

Almone, V. A.
Allon, C. J.
Brown, A. L.
Cummings, M. A.
Cutter, I. T.
Dennett, D. C.
Gale, H. A.
Hammond, Philip
Hersey, H. W.
†Hildreth, J. L.
Lowell, W. H.
McCarthy, C. F.
Mead, G. N. P.
Ordway, C. E.
Putnam, Ralph
Simon, H. F.
Tozler, C. H.

WINDSOR (Berkshire).

WINTHROP (Suffolk).

Lickinson, G. W.
Grainger, E. J.
Halsall, M. E.
Johnson, O. E.
Metcalf, B. H.
Morse, F. H.
Parker, R. B.
Soule, H. J.
White, L. N.

WOBURN (Middlesex East).

Bixby, J. P.
Blake, H. G.
Carroll, J. P.
Caulfield, T. E.
Chalmers, Robert
Coulln, R. E.
Crawford, L. P.
Hutchings, J. H.
Keleher, W. H.
Lane, C. G.
McCormick, J. J.
O'Brien, C. T.
Stewart, V. C.
Tedford, A. H.
West, F. O.

Wollaston (QUINCY).

Adams, C. S.
Champion, M. E.
Crawford, L. P.
Curtis, W. G.
Funnell, W. G.
King, G. E.
Merritt, R. E.
Phipps, W. A.

WORCESTER (Worcester).

Adamlan, P. A.
Adams, G. E.
Albee, G. M.
Andrews, B. F.
Atwood, A. W.
Auger, L. L.
Ayers, C. E.
Baff, Max
Baker, F. H.
Balcom, K. I.
Barnes, J. A.
Barrell, M. E.
Bergin, S. A.
Berry, Gordon

WORCESTER (continued).

†Berry, J. C.
 Bieberbach, W. D.
 Bigelow, E. B.
 Bowers, G. F. H.
 Boyden, A. H.
 Brennan, J. J.
 Brown, A. A.
 Brown, G. C.
 Bryant, Frederick
 Burley, B. T.
 Butler, F. J.
 Butterfield, G. K.
 Byrne, C. J.
 Cahill, J. W.
 Carney, P. J.
 Cassels, L. R.
 Charteris, M. A.
 Clark, W. I., Jr.
 Colberg, P. A.
 Cook, P. H.
 Cottle, L. R.
 Croissant, C. A.
 Cronin, T. J.
 Cross, A. E.
 Cummings, J. J.
 Curran, J. F.
 Currie, I. M.
 Cutler, R. W.
 Daudelin, S. A.
 Deering, G. E.
 Delahanty, W. J.
 Denning, W. E.
 Disbrow, E. P.
 Dix, G. A.
 Dixon, Arthur
 Doan, W. E.
 Donoghue, J. J.
 Donohue, J. J.
 Doray, F. L.
 Drew, C. A.
 Ducharme, A. N.
 Duggan, J. T.
 Elkind, H. B.
 Emerson, B. K.
 Emery, G. E.
 Estabrook, C. T.
 Everett, O. H.
 Fallon, M. F.
 Farnham, J. M. W.
 Fay, F. G.
 Fitzgerald, C. P.
 Flynn, J. J.
 Fogerty, W. C.
 Foley, T. J.
 Fox, M. B.
 Gage, Homer
 Gagnéreaux, E. A.
 George, F. W.
 Getchell, A. C.
 Gibby, H. J.
 Gilfillan, D. R.
 Gilman, W. R.
 Grant, W. M.

WORCESTER (continued).

Greene, R. W.
 Gwynne, S. C.
 Haigh, G. W.
 Halloran, M. J.
 Harkins, J. F.
 Harower, David
 Hart, F. D.
 Hartnett, J. H.
 Haviland, W. C.
 Hayden, J. J.
 Hill, G. H.
 Holmes, M. S.
 Horsman, H. L.
 Hunt, E. L.
 †Jordan, G. A.
 Kenney, T. F.
 Kinnicutt, Roger
 Lazarus, Louis
 Lemaire, W. W.
 Lincoln, G. C.
 Lincoln, Merrick
 Lindsay, J. C.
 Lindsay, J. I.
 Lindsay, M. S.
 Lovell, D. B.
 Lussier, C. A.
 Lynch, W. F.
 McClusky, H. L.
 MacFadyen, J. A.
 MacKay, W. H.
 MacKerrow, H. G.
 Magune, F. L.
 †Marble, J. O.
 Marsh, A. W.
 Mason, B. H.
 Masten, C. H.
 Mathews, R. F.
 McDonald, J. W.
 McEvoy, T. E.
 McGillicuddy, J. T.
 McKibben, W. W.
 McKoan, J. W.
 McSheehy, T. C.
 Messier, A. E.
 Miller, L. C.
 Murphy, A. F.
 Nightingale, James
 O'Callaghan, M. V.
 O'Connell, A. E.
 O'Connor, D. F.
 O'Connor, J. F.
 O'Connor, J. W.
 O'Day, G. F.
 O'Meara, M. J.
 Osborne, C. A.
 Overlock, M. G.
 Paglia, J. J., Jr.
 Parker, E. L.
 Peterson, H. O.
 Phelps, O. D.
 Pofcher, E. H.
 Power, G. A.
 †Quinby, H. M.

WORCESTER (continued).

Randall, C. W.
 Rice, J. E.
 Ricker, C. H.
 Ring, A. J.
 Robinson, Solomon
 Rochette, E. C.
 Rockwell, A. E. P.
 Rockwell, L. W.
 Rose, W. H.
 Schofield, R. W.
 Seelye, W. C.
 Shannahan, R. J.
 Shattuck, A. M.
 Shaw, T. B.
 Shea, P. O.
 Simmons, E. B.
 Simmons, H. C.
 Smith, L. R.
 Sparrow, C. A.
 Stansfield, O. H.
 Stapleton, R. H.
 Stevens, C. B.
 Stowell, F. E.
 Swan, R. W.
 Swasey, Edward
 Talbot, J. E.
 Taylor, James, Jr.
 Thom, D. A.
 Tripp, G. A.
 Trowbridge, E. H.
 Voorhis, Kathalyn
 Ward, G. O.
 Ward, R. J.
 Watkins, R. P.
 Watt, George
 Wheeler, C. D.
 Wheeler, Leonard
 Whitaker, C. W.
 White, Levi
 Williams, F. R.
 Woodward, L. A.
 Woodward, L. F.
 Woodward, S. B.
 †Workman, W. H.
 Yoosuf, A. K.

WORTHINGTON (Hampshire)

Lyman, W. R.

WRENTHAM (Norfolk).

Kable, J. D.
 Libby, M. A.
 Perkins, F. H.
 Pillsbury, A. R.
 Proctor, T. M.
 Wallace, G. L.

YARMOUTH (Barnstable).

(See also: Yarmouth Port.)

Yarmouth Port (YARMOUTH).

Hart, H. B.

NON-RESIDENTS, BY STATES AND COUNTRIES1918

CALIFORNIA.

Boyd, S. G., San Francisco.
 Bush, A. D., Los Angeles.
 †Crocket, S. E., Los Angeles.
 †Dwight, H. L., Cooperopolis.
 Goss, F. W., Sacramento.
 Grover, A. L., Los Angeles.
 Iloit, H. A., Pasadena.
 Johnson, F. M., Los Angeles.
 Johnson, W. S., Los Angeles.
 Lucas, W. P., San Francisco.
 Mansur, L. W., Los Angeles.
 Metcalf, J. T., Los Angeles.
 Munroe, H. B., Los Angeles
 Shea, J. J., San Diego
 †Stephenson, F. B., Claremont.
 Williams, C. C., Santa Monica Beach.

COLORADO.

Carry, F. H., Denver.
 Hartwell, J. B., Colorado Springs.

CONNECTICUT.

†Bragdon, G. A., Middletown.
 Browne, W. T., Norwich.
 Clark, J. D., Abington.
 Cox, S. F., New Haven.
 Honelj, J. A., New Haven.
 LaMoure, C. T. E., Mansfield Depot.
 Loewe, L. J., Higginnum.
 †Page, C. W., Hartford.
 †Swan, W. C., Bradford.

FLORIDA.

Coon, G. B., Tampa.

GEORGIA.

Comey, P. P., Augusta.
 Fraim, I. W., Macon.

HAWAII.

Stevens, S. E., Honolulu.

ILLINOIS.

Adler, H. M., Chicago.

INDIANA.

Bliss, G. S., Fort Wayne.
 Woodbury, H. E., Indianapolis.

LOUISIANA.

Cody, H. C., New Orleans.

MAINE.

Allen, S. W., York Harbor.
 Averill, G. G., Waterville.
 Berry, W. D., Bangor.
 Cummings, D. F., Cherryfield.
 Eastman, T. J., South Berwick.
 Hall, W. D., Port Clyde.
 Hedin, C. J., West Pownal.
 Jackson, F. W., Jefferson.
 Janjigian, R. R., Bangor.
 Morrison, A. B., Weeks' Mills.
 O'Brien, C. K., Bangor.
 Pettigill, O. S., Hebron.
 Reynolds, R. L., Waterville.
 Richardson, H. K., Bradford.
 Stevens, H. E. E., Lewiston.
 Swift, H. M., Portland.
 Thompson, H. E., Augusta.

MICHIGAN.

Couric, W. F., Detroit.

MINNESOTA.

Boothby, W. M., Rochester.
 †Hayes, C. C., Faribault.
 Marcey, W. J., Minneapols.

MISSOURI.

Burlingham, L. H., St. Louis.
 Murphy, F. T., St. Louis.
 Washburn, Elliott, Kansas City.

NEW HAMPSHIRE.

Allen, Bradford, Nashua.
 †Balcom, G. F., Swanzy.

NEW HAMPSHIRE (continued).

Bowles, G. H., Plymouth.
 Bradford, H. W., Wolfeborough.
 Brownrigg, A. E., Nashua.
 Farrington, L. M., Manchester.
 Faulkner, H. K., Keene.
 Gile, J. M., Hanover.
 Graves, R. J., Concord.
 Hill, L. R., Concord.
 Holmes, J. F., Manchester.
 Hubbard, O. H., Gilsum.
 Johnson, S. C., Franconia.
 Kean, M. E., Manchester.
 Kennison, F. M., Newton.
 Laton, G. P., Salem Depot.
 MacMillan, A. L., Jr., Concord.
 Mansfield, B. B., Union.
 Parker, W. A., Bartlett.
 Pike, F. W., Portsmouth.
 Powell, M. A., Laconia.
 Proctor, J. D., Keene.
 Rogers, J. A., Nashua.
 Smith, C. S., Manchester.
 Stowell, E. C., Marlboro.
 Stowell, S. R., Marlboro.
 Taft, A. A., Keene.
 Tibbetts, G. D., Bennington.
 Wallace, A. S., Nashua.
 Wilkins, G. C., Manchester.

NEW JERSEY.

Christiernin, C. L., East Orange.
 Dunham, H. B., Glen Gardner.
 Ferguson, R. H., East Orange.
 Goshline, H. I., Trenton.
 Hahn, A. J., Pattenburg.
 McKae, A. J., Upper Montclair.
 Ten Broeck, Carl, Princeton.

NEW YORK.

Boehm, J. B., Brooklyn.
 Carley, M. E., New York.
 Clark, J. E., Utica.
 Cookidge, J. N., New York.
 Cutler, E. C., New York.
 †Fisher, C. L., New York.
 Fisk, A. L., New York.
 Gervais, H. M., Brooklyn.
 Golob, Myer, New York.
 Hinds, R. W., Buffalo.
 Holden, E. M., New York.
 Kelley, H. J., Ossining.
 Laighton, F. M., New York.
 McCann, G. F., New York.
 McCarthy, T. P., Jamaica, L. I.
 McPherson, Ross, New York.
 Ogden, J. B., New York.
 Ordway, Thomas, Albany.
 Schorer, C. B. J., White Plains, N. Y.
 Shoninger, L. S., New York.
 Smith, S. B., New York.
 Stammers, J. C., New York.
 Stone, J. A., Otisville.
 Thompson, W. J., Poughkeepsie.
 Tibbetts, J. T., Mineola.
 Woodbury, W. R., Rochester.

NORTH CAROLINA.

Achord, J. W., Pine Bluff.
 Packard, G. H., White Rock.

OHIO.

Casey, C. A., Ironton.
 Schwab, Emanuel, Cincinnati.

OREGON.

Whiteside, G. S., Portland.

PENNSYLVANIA.

Finlayson, A. D., Warren.
 Fuller, D. H., Philadelphia.

PENNSYLVANIA (continued).

Jackson, R. C., Harrisburg.
 Law, K. H., Erie.
 Mitchell, H. W., Warren.
 Smith, F. S., Pittsburgh.
 Smyser, C. J., New Wilmington.
 Wheeler, L. A., Wernersville.

RHODE ISLAND.

Blake, LeGrande, Riverside.
 Borden, G. E., Adamsville.
 Brown, H. S., Providence.
 Davenport, J. H., Providence.
 Devere, F. H., Auburn.
 Gerber, Isaac, Providence.
 Hamblet, M. L., Wallum.
 Hayes, A. E., Providence.
 Iloit, C. H., Pawtucket.
 Keefe, P. H., Providence.
 MacLeod, N. M., Newport.
 Means, P. C., Apponaug.
 Messinger, H. C., Providence.
 Metcalf, Richard, Providence.
 Munro, W. L., Providence.
 Murphy, E. V., Newport.
 O'Meara, J. G., Providence.
 Porsky, M. A., Providence.
 Sullivan, J. E., Providence.
 Turner, C. S., Providence.

TEXAS.

Parsons, A. W., Devine.
 Tomkles, J. S., Dallas.

VERMONT.

Marshall, A. T., Chelsea.
 Russell, F. J., Letchworth Village,
 P. O. Thiells, N. Y.

VIRGINIA.

Pratt, M. R., Charlottesville.

WEST VIRGINIA.

Boland, L. F., Welch.

WISCONSIN.

Greeley, H. P., Waukesha.
 McGrath, B. F., Milwaukee.

WYOMING.

†Berry, L. M., Junction.

DISTRICT OF COLUMBIA.

Bailey, W. C., Washington.
 Hopkins, J. W., Washington.
 Howland, C. A., Washington.
 White, J. R., Washington.

PANAMA CANAL ZONE.

Rates, L. B., Ancon.

U. S. ARMY.

Bauer, L. H.,
 Newton, R. W.,
 Wood, Leonard.

U. S. NAVY.

Moran, C. L.

FOREIGN.

Bridgman, B. N., Natal, S. Africa.
 Calkin, R. H., Stellarton, N. S.
 Cockett, M. S., Paris, France.
 Pales, A. C., Middleton, N.S.
 Ghorcyeh, A. W., France.
 Hanley, J. J., Motherwell, Scotland.
 McKelvey, A. D., Toronto, Canada.
 McKinnon, D. L., Truro, N. S.
 †Prince, J. P., Durban, South Africa.
 St. Marie, Philippe, Canada.
 Shepherd, W. G., Canada.
 Smillie, W. G., Sao Paulo, Brazil.
 Storrs, H. R., Vancouver, B. C.
 Street, L. A. B., Shanghai, China.
 Townsend, David, River Glade, N. B.

ADDRESS UNKNOWN.

†Brown, Marshall, Lebanon.

NUMERICAL SUMMARY OF FELLOWS BY DISTRICTS

GIVING CITIES AND TOWNS

[Names of Cities are printed in Capitals.]

1918

BARNSTABLE DISTRICT.

Established 28 May, 1840.

Barnstable	8	Orleans	1
Bourne	1	Provincetown	5
Brewster	1	Sandwich	3
Chatham		Truro	
Dennis	3	Wellfleet	1
Eastham		Yarmouth	1
Falmouth	2		
Harwich	3	Total	29
Mashpee			

Active 29.

BERKSHIRE DISTRICT.

Established 7 Oct., 1807.

Adams	4	NORTH ADAMS	11
Alford		Otis	
Becket	1	Peru	
Cheshire		PITTSFIELD	42
Clarksburg		Richmond	
Dalton	3	Sandisfield	
Egremont		Savoy	
Florida		Sheffield	1
Great Barrington	5	Stockbridge	4
Hancock		Tyringham	
Hinsdale		Washington	
Lanesborough	1	West Stockbridge	1
Lee	1	Williamstown	5
Lenox	2	Windsor	
Monterey			
Mount Washington		Total	81
New Marlborough			

Active 76 Retired 5

BRISTOL NORTH DISTRICT.

Established 31 May, 1849

Attleborough	14	Norton	1
Dighton	1	Raynham	
Easton	2	Rehoboth	
Freetown	1	Seekonk	
Lakeville*	1	TAUNTON	30
Mansfield	4		
Middleborough*	5	Total	63
North Attleborough	4		

Active 58. Retired 5.

BRISTOL SOUTH DISTRICT.

Established 3 April, 1839.

Acushnet		NEW BEDFORD	66
Chilmark		Oak Bluffs	
Dartmouth	1	Rochester	
Edgartown	1	Somerset*	1
Fairhaven	1	Swansea*	1
FALL RIVER	58	Tisbury	3
Gay Head		Wareham	1
Gosnold		Westport	1
Marion	2	West Tisbury	
Mattapoisett	2		
Nantucket	2	Total	139

Active 136. Retired 3

ESSEX NORTH DISTRICT.

Established 6 Oct., 1841.

Amesbury	8	Newbury	
Andover	7	NEWBURYPORT	13
Boxford		North Andover	3
Georgetown	4	Rowley	1
Groveland	1	Salisbury	
HAVERHILL	49	West Newbury	1
LAWRENCE	65		
Merrimac	1	Total	162
Methuen	9		

Active 160. Retired 2.

ESSEX SOUTH DISTRICT.

Established 7 June, 1804.

BEVERLY	18	Nahant	1
Danvers	14	Peabody	13
Essex	1	Rockport	3
GLOUCESTER	20	SALEM	37
Hamilton	2	Saugus	6
Ipswich	3	Swampscott	6
LYNN	95	Topshfield	1
Lynnfield	1	Wenham	
Manchester	3		
Marblehead	7	Total	232
Middleton	1		

Active 227 Retired 5

FRANKLIN DISTRICT.

Established 27 May, 1851.

Ashfield		Monroe	
Barnardston	2	Montague	4
Buckland		New Salem	
Charlemont		Northfield	3
Colrain	2	Orange	4
Conway		Rowe	
Deerfield	2	Shelburne	3
Erving	1	Shutesbury	
Gill		Sunderland	1
Greenfield	14	Warwick	1
Hawley		Wendell	
Heath		Whately	
Leverett			
Leyden		Total	37

Active 36 Retired 1.

HAMPDEN DISTRICT.

Established 28 May, 1840.

Agawam	1	Montgomery	
Blandford		Palmer	9
Brimfield	1	Russell	
Chester	1	Southwick	
CHICOPEE	7	SPRINGFIELD	139
Granville	1	Tolland	
Hampden		Wales	
Holland		Westfield	14
HOLYOKE	50	West Springfield	4
Longmeadow	1	Wilbraham	1
Ludlow	1		
Monson	2	Total	232

Active 221 Retired 11

* By vote of the Council, June 7, 1910, Somerset and Swansea were transferred to Bristol South, and Lakeville and Middleborough to Bristol North.

HAMPSHIRE DISTRICT.

Established 5 Oct., 1831.

Amherst	7	NORTHAMPTON	31
Belchertown	1	Pelham	
Chesterfield		Plainfield	
Cummington	1	Prescott	
Easthampton	6	Southampton	
Enfield	1	South Hadley	4
Goshen	6	Ware	4
Granby		Westhampton	3
Greenwich		Williamsbury	3
Hadley	2	Worthington	1
Hatfield	3		
Huntington	1	Total	65
Middlefield			

Active 62 Retired 3.

MIDDLESEX EAST DISTRICT.

Established 2 Oct., 1850.

Burlington		Wilmington	2
MELROSE	15	Winchester	17
North Reading	3	WOBURN	15
Reading	6		
Stoneham	6	Total	74
Wakefield	10		

Active 70 Retired 4.

MIDDLESEX NORTH DISTRICT.

Established 2 Oct., 1844.

Acton		Groton	1
Bedford	1	Littleton	
Billerica	4	LOWELL	86
Boxborough		Pepperell	2
Carlisle		Tewksbury	1
Chelmsford	3	Tyngsborough	1
Dracont		Westford	1
Dunstable			
		Total	107

Active 103 Retired 4

MIDDLESEX SOUTH DISTRICT.

Established 2 Oct., 1850.

Arlington	14	MARLBOROUGH	7
Ashland	1	Maynard	2
Belmont	20	MEDFORD	16
Brighton*	30	Natick	9
CAMBRIDGE	123	NEWTON	56
Charlestown*	18	Sherborn	
Concord	7	SOMERVILLE	66
EVERETT	16	Stow	
Framingham	21	Sudbury	1
Holliston		WALTHAM	23
Hopkinton	1	Watertown	8
Hudson	2	Wayland	
Lexington	6	Weston	1
Lincoln	3		
MALDEN	36	Total	487

* A part of Boston.

Active 471 Retired 16.

NORFOLK DISTRICT.

Established 2 Oct., 1850.

Bellingham		Milton	10
Brookline	109	Needham	4
Canton	7	Norfolk	2
Dedham	7	Norwood	9
Dorchester*	120	Roslindale*	11
Dover	1	Roxbury*	107
Foxborough	3	Sharon	3
Franklin	2	Walpole	
Hyde Park*	8	Wellesley	19
Jamaica Plain*	44	West Roxbury	12
Mattapan*	16	Wrentham	6
Medfield	3		
Medway	3	Total	569
Millis	1		

Active 493 Retired 16

NORFOLK SOUTH DISTRICT.

Established 1 Oct., 1884.

Braintree	8	QUINCY	225
Cohasset	3	Randolph	3
Hingham	7	Weymouth	12
Holbrook	2		
Hull	1	Total	290

Active 69

PLYMOUTH DISTRICT.

Established 2 Oct., 1850.

Abington	6	Pembroke	1
Avon	1	Plymouth	8
Bridgewater	11	Plympton	
BROCKTON	53	Rockland	4
Carver		Scituate	2
Duxbury	3	Stoughton	2
Halifax		West Bridgewater	
Hanover	2	Whitman	8
Hanson			
Kingston	1	Total	106
Marshfield	4		
Norwell			

Active 99 Retired 7

SUFFOLK DISTRICT.

Established 7 June, 1804.

BOSTON*	650	Winthrop	9
CHELSEA	18		
Revere	12	Total	685

Active 672 Retired 13

* Except Brighton and Charlestown, which are in the Middlesex South District, and Dorchester, Hyde Park, Jamaica Plain, Mattapan, Roslindale, Roxbury, West Roxbury, and that part of Boston lying south of a line beginning at Dorchester Bay opposite end of Preble Street, and running in a general north-easterly direction through the middle of Preble and Swett (now Southampton) Streets to Northampton Street, then by the middle of Northampton Street to Washington Street, then by the middle of Washington Street to Camden Street, then by the middle of Camden and Gainsborough Streets to Huntington Avenue, then by the middle of Huntington Avenue to the Huntington Avenue entrance of the Back Bay Park, then across the Park westerly to the waterway known as Muddy Brook, then by Muddy Brook to St. Mary's Street, then by the middle of St. Mary's Street to the Charles River, which are in the Norfolk District.

WORCESTER DISTRICT.

Established 7 June, 1804.

Auburn	Leicester	3
Barre	2 Mendon	4
Berlin	1 Millis	5
Blackstone	1 New Braintree	2
Bolton	2 Northborough	3
Boylston	2 Northbridge	3
Brookfield	1 North Brookfield	11
Charlton	1 Oakham	3
Clinton	1 Oxford	6
Dana	6 Paxton	1
Douglas	1 Princeton	6
Dudley	6 Rutland	2
Grafton	2 Shrewsbury	1
Hardwick	1 Southborough	5
Harvard	2 Southbridge	1
Holden	1 Spencer	4
Hopedale	1 Sterling	1
Hubbardston	1 Sturbridge	1
Lancaster	1	1

WORCESTER DISTRICT (continued).

Sutton	Westborough	7
Upton	West Boylston	4
Uxbridge	West Brookfield	2
Warren	WORCESTER	187
Webster		8
Total		273

Active 264 Retired 9.

WORCESTER NORTH DISTRICT.

Established 25 May, 1858.

Ashburnham	2 Phillipston	1
Ashby	1 Royalston	4
Athol	1 Shirley	6
Ayer	2 Templeton	1
FITCHBURG	34 Townsend	1
Gardner	16 Westminster	1
LEOMINSTER	9 Winchendon	6
Lunenburg	1	83
Petersham	Total	83

Active 82. Retired 1.

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DISTRICT SOCIETIES.	RETIRED	ACTIVE	TOTAL
Barnstable		29	29
Berkshire	5	76	81
Bristol North	5	58	63
Bristol South	3	136	139
Essex North	2	160	162
Essex South	5	227	232
Franklin	1	36	37
Hampden	11	221	232
Hampshire	3	62	65
Middlesex East	4	70	74
Middlesex North	4	103	107
Middlesex South	16	471	487
Norfolk	16	493	509
Norfolk South		69	69
Plymouth	7	99	106
Suffolk	13	672	685
Worcester	9	264	273
Worcester North	1	82	83
Fellows resident in Massachusetts	105	3328	3433
Fellows resident in other States and Countries.....	7	181	188
	112	3509	3621
Fellows, addresses unknown	1		1
Whole number of Fellows in the Society, Jan. 1, 1919.	113	3509	3622

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